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ABSTRACT

Fifteen papers from the University of South Africa's Conference on Distance Education are presented on professional education and practical training. They include: "Essential and Professional Education of Physics Teachers in Poland" (Kazimierz A. Badziag); "Vocational Teaching at a Distance: The New Zealand Perspective" (Dave Nicoll); "Principles and Practices in Distance Education" (Faith B. Collins); "Providing a Reality Base for Your Qualification" (Johan Herholdt); "The Role of Private Correspondence Colleges in the Fields of Tertiary Business Education in South Africa" (Theuns Gerber); "The Necessity for Distance Teaching in the In-Service Education of Teachers in Southern Africa" (R.M. Yule); "The 'Distance' Implications of Cooperative Education at Residential Universities as a Strategy to Ensure Effective Education for the Professions" (A.J. Havenga); "Career-Oriented Technikon Training (Technikon Programmes) by Means of Distance Teaching, with Special Reference to Laboratory, Practicals, and In-Service Training" (Z. van Dyk); "The Development of a Computer Package for Distance Education Accounting Students" (D.E. Wolvaardt et al.); "The Development of Distance Education for Traffic Police" (M.G.T. Cloete); "Professional Development in Vocational Courses such as Social Work with Specific Attention to Field Instruction" (R.C.W. van Bijon); "Beyond Professional Training: Developing Mental Health Leadership" (discussion: W.J. Jordaan, P. LeRoux, G. Rodemeyer, F.J.A. Snyders); "Teaching Cataloguing and Classification by Correspondence" (M.S. van der Merwe); "The Practical Component in the Education Programme of Students in Library and Information Science at UNISA" (Wanda Thomas); and "The Contribution of Distance Education to the Development of the Nursing Profession in Southern Africa" (Charlotte Searle). (LB)

PAPERS 4.1

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Professional education and practical training at a distance

DISTANCE EDUCATION IN
SOUTHERN AFRICA:
PREPARING FOR THE 21ST CENTURY

18 - 21 MAY 1987

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PREFACE

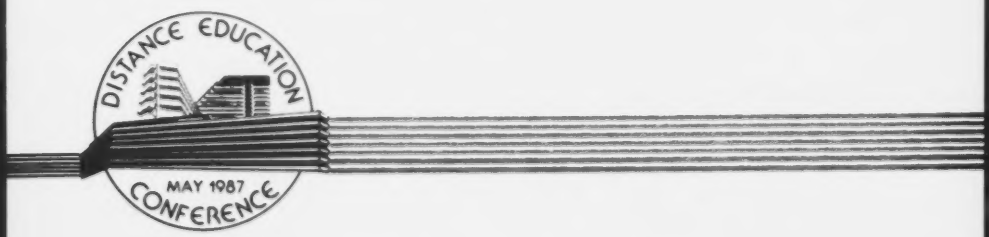
The conference papers to be presented at the University of South Africa's Conference on Distance Education are contained in a number of volumes for easy reference. The papers have been collected according to basic themes as follows:

The theory and practice of distance education	**Papers 1**
Issues in education and distance education	**Papers 2**
Media and technology in distance education	**Papers 3.1, 3.2**
Professional education and practical training at a distance	**Papers 4.1, 4.2**
Administration and student support in distance education	**Papers 5**
Systems and strategies in distance education	**Papers 6**

This is Volume 4.1 of the papers. The table of contents lists the papers in this volume in order of abstract numbers.

In the alphabetical index all participants' names, the abstract number of their paper, the session allocated and the volume in which the paper is published can be found. Not mentioned are papers that may be published in Volume 7 entitled "Late Submissions".

F. van den Bogaerde
CONFERENCE CHAIRMAN



KEY

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1000 SERIES — Participants from Africa and Abroad
2000 SERIES — Participants from southern Africa
3000 SERIES — Participants from the University of South Africa

3100 — Administrative and Professional
3200 — Faculty of Arts
3300 — Faculty of Education
3400 — Faculty of Economic and Management Sciences
3500 — Faculty of Law
3600 — Faculty of Science
3700 — Faculty of Theology

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Essential and professional education of the physics teachers in Poland

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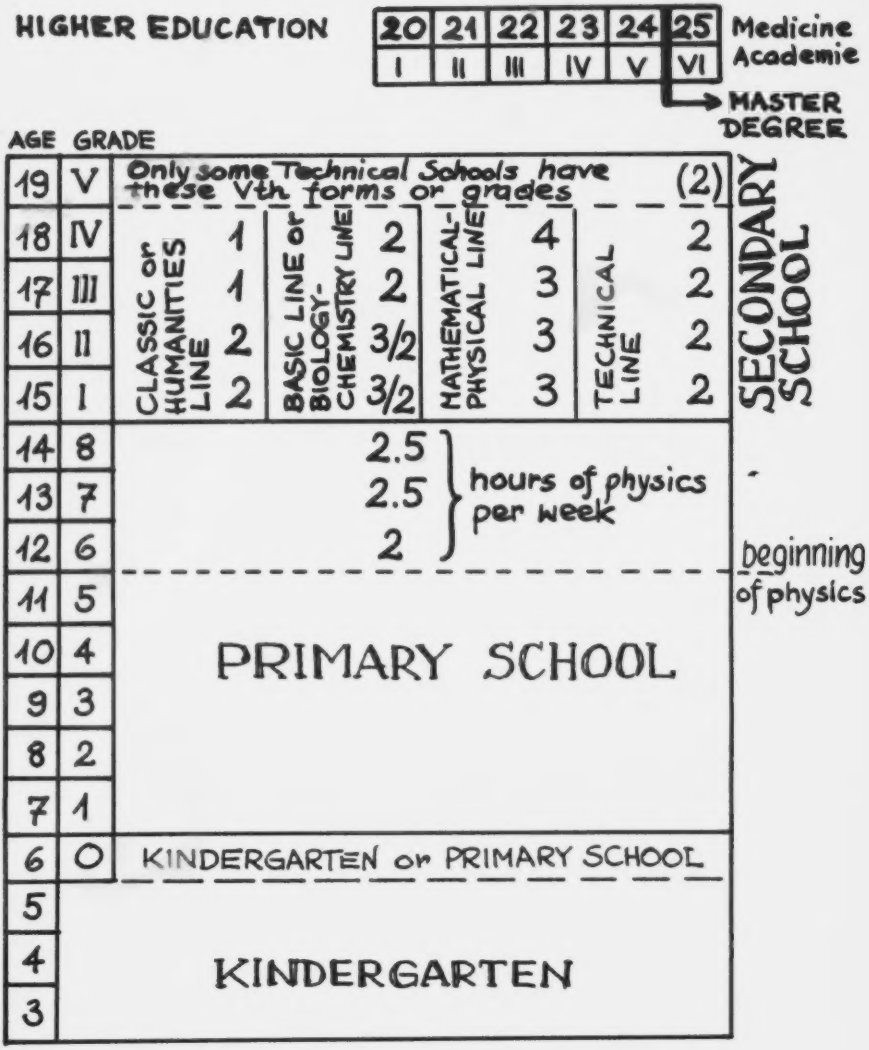
Introduction

At ten Universities and seven Teacher Training Colleges we are producing physics teachers in Poland.
After finishing a eight years primary school and than after graduating from secondary school /four years of study/ or secondary technical school /five years/, the 18 or 19 year old graduate has the right to contend for acceptance into a higher education /University or College/ that he chooses himself. To be accepted to a higher education candidates must pass an entrance examination. Exception make these candidates who are laureates of the teaching-subjects olimpic games /winners of 'olimpics' in mathematics, physics, astronomy or chemistry/. The number of places for students in every department is limited, so that only those candidates who get the highest marks are accepted. At Teacher Training Colleges, there is only one specialisation: teacher section. At the universities, candidates for the teachers' section of physics studies sit examinations together with candidates for the non-teachers' sections, passing examinations in the same subjects within a given range of subjects. The entrance examination is composed of a written examination in physics /they must solve three calculating problems and answer one question in the time of about four hours/ and a chosen foreign language, plus an oral examination in physics and mathematics. The scope of subject should not be greater than that in the secondary school. At the university the decision to study on the teachers' section makes the student himself after two or three years of study.
The following diagram /next page/ shows the current polish school system.



Tab. 1. POLAND'S SCHOOL SYSTEM

1. Remarks as to the arrangement of the essential education of the physics teachers

The education of a physics teacher has many components. In the first place, the candidate for physics teacher ought to know physics and he should have a good knowledge of mathematics. Then there are many other subjects. In my country, at the University of Gdańsk our students are required during 5-year study to go through the following bloks of subjects:

social-political subjects	300 h / 7,6%/
essential subjects /phys. and math./	2760 h /69,7%/
foreign languages	210 h / 5,3%/
physical education and def. school	360 h / 9,1%/
professional praparation	330 h / 8,3%/
Total	3960 h/100,0%/

The physics curriculum starts with the fundamentals of physics. Next goes electronics; atomic, nuclear and particle physics; the particle and solid body; classical and quantum mechanics; electrodynamics; statistical physics and astronomy with astrophysics. There are, besides two or three experimental laboratory classes and specialised lectures, M.A. seminars and an M.A. laboratory.

'Fundamentals of physics' is taught during the first 4 semesters; it is the basis of a high school education of a physicists, providing a synthesis of a contemporary knowledge of science. Special attention is paid to basic questions. Theoretical physics is partly interlaced with experimental physics, classical physics with quantum and relativistic physics. During study, experiments illustrating most important phenomena are conducted, and then they are explained as thoroughly as possible with the help of mathematical models. After passing an examination on 'the fundamentals of physics' students should be prepared for a high - level study of advanced sections of experimental and theoretical physics. The lectures of 'fundamentals of physics' are accompanied by classes whose purpose is to use, illustrate and broaden the material of the lecture, particularly by means of problem -

solving methods.

A series of laboratory studies begins in the term 2 of the first year and is composed of laboratory I, electronic laboratory, laboratory II, laboratory of the didactics of physics, laboratory of the didactics of astronomy and the M.A. laboratory already mentioned. Experiments in laboratory I are closely related to the program of the lectures of 'Fundamentals of physics.' The goal is to make the students acquire the ability to use different measuring apparatus, to take measurements, to solve simple experimental problems and to make analyses of measured data.

I like to pay your attention to mathematical subjects. Mathematics comprises mathematical analysis, algebra with geometry, mathematical methods in physics and programming, numerical methods and methods of problem solving. The main reason for teaching mathematical subjects to physics teachers is to teach them how to work with those indispensable methods and techniques necessary for a full understanding and ready use of mathematical formalism in physics. In particular, the students with the teacher's specialisation cannot be left in any doubt concerning the formal or computational side of physical problems, because in their later work they might not be able to resolve these doubts by themselves. Another reason for teaching mathematical subjects is to show the students some perspective of the further applications of mathematics offered by contemporary developments. This requires the presentation of mathematics in the context of its present state. The teaching of mathematics can also become an important factor in developing the general ability to think logically, and connected with this, to formulate assumptions correctly and to prove theorems. This element is particularly stressed in the teachers' specialisation courses. Students study mathematics mainly during the first two years, being involved in around 660 hours of lectures and classes.

2. <u>Choice and composition of contents of the professional education of the physics teachers</u>

The last group of subjects already mentioned as 'professional preparation' contains pedagogigs /90h/, psychology /90h/ and didactics of physics. Now I would like to turn your attention to the subject called 'Didactics of Physics'.
The goal of the didactics of physics is a theoretical and practical preparation of students for a teacher's job. Students become familiar with most important problems of the didactics of physics on the primary and secondary level of teaching and learning. During classes, accompanying lectures in a physical laboratory, and pedagogical practices conducted at schools, students acquire their practical abilities to deal with physics experiments at school, and they develop their didactical abilities connected with the process of learning and teaching of pupils.
Didactics of physics as a subject is divided into following activities: lectures 30 h,
classes for lectures with schoolpract. 45h,
school laboratory with AV aids 30 h.
Besides these, we have also 30 h seminars and a schoolpractise for about 8 weeks /3 weeks in primary school, 3 weeks in vocational schools and 2 weeks in secondary schools/.
As you can see, for the lectures on didactics of physics there remains only 30 h. For that reason, the selection and composition of the contents of a lecture on that subject is a problem of main interest to many our physics didactitions. Somebody will say, that the starting point by composition and selection of the contents of a lecture on didactics of physics should be the rule of a modern education of a teacher: the rule of incessant education and the rule of modernize of the educational process. In connection to the last one, we should take into consideration 3 more particular rules or laws: the low to educate teachers on the highest level, the low of activisation the students during the educational process and the law of the full utilisation of the modern didactical aids. I'm sure that this is true. But I have some objections to such a formulation of the starting point to the selection and composition of the con-

tents of a lecture on our subject. In my opinion the starting point by formulating of a curriculum couldn´t be any rules or laws but only the aims, which apart from the initial and marginal conditions determine in a fundamental manner every projected curriculum. To these initial and marginal conditions we should include the actuall state of knowledge of the population for whom we are preparing this curriculum /different for normal - day - students and other for sundaystudents/ and the time limit for its realisation.
But, why should we teach didactics of physics?
Some people, in my coutry, think that for good teaching physics you need only, if you are good educated in physics, some popularisation abilities, which for sure is not the sufficient qualification. One example:
Last year, Prof. Dieter Nachtigal an Westgerman didactition, questionned about 500 students from the nineth´grade classes from different types of schools. He asked: How do you like physics? /extraordinary, tolerably or not at all/. Three quarter of the investigated population answered that they are only tolerably or not at all interested in physics. Many of them said, that the definition ´not at all´is too mild. They expressed their opinions extremly negative. The reasons of such a negative opinion were: ´too many formulas which one cannot remember´, ´too high grade of mathematisation which sense we cannot understand´, ´too few experiments, and when they appear they are only made by the teacher´, ´too many informations full of details which we must learn and about that we don´t know where they could be used.´
How should we prevent this? - asked Prof. Nachtigal. Can we really do it only by increasing the number of hours for physics using the cost of "not indispensable or sometimes doubtful hours of didactics"? as asserts one of the oponents? From my experience /D.N./ arises, that this what rejects students from physics is the weak acquaintance of the physics teacher of the arising and forming of the mental structures, ignorance of the function of the individual activity, emotions, linguistical resources etc., as well as a non-

scientific character /amateurish/ in applying this very weak knowledge in the process of teaching-learning physics. Only the evolution of the physical way of thinking itself is for the child so complicated and dependent from so many parameters that up till now we have possessed in this matter results with reference to few sections of physics only. The physics didactics opponents assert that you can read about this subject later when you are in need. But this reading by the teacher in that moment when it is needed in a class of at least 30 individuals is of such a value like the reading of an experimental instruction instead of performing physical experiment. To understand and acquire to oneself the needed knowledge but not only as a prescription it is necessary to execute the experiment by oneself. The every-day situations, which occurs in teaching are too complicated. As in every theorie, so also here the teacher must be conscious of that applying of results of the teaching-learning process has an limited time scope. The results have here only hipothetical importance. The components of this process change, the hipothesis needs investigation, anew enlargement of the theorie and sometimes their abolition. All this must be known by the teacher,

Once we were /D.N./ in the kindergarten. We build there for the children two circulars, concentric tracks. We gave two electric small wagons such velocities that they were moving close to each other. They started together and after the same time they came together to the starting line. We asked children, if one of these wagons was moving faster, or if they were moving in the same rate, if one had a greater speed.

For a physicists the answer is very trivial, but a child thinks differently. How it thinks this we don't know exactly. It must be investigated and not only persist by adapting the formula $\frac{\Delta s}{\Delta t}$.

This was one example, that "only some popularisation abilities" are not the sufficient qualification for good teaching physics.

And now back to our aims. Very important is here to take into consideration on what level the teacher will teach - primary or secondary? Because, the lower level set less requirement with regard to the essential preparation but very high with regard to the didactical preparation, on higher level - on the contrary.

We should put out three fundamental aims:

1/ A broad essential preparation, which makes possible to teach physics on the secondary level and even a little above this level /in Poland in mathematical - physical classes/.

2/ A broad methodical preparation to lead lessons activities and activities beyond lessons, not only on the systematic but also on the propedeutical level.

3/ Forming the personality of the future teacher.

This time I'm interested in the second of the mentioned aims. Of course, there exists an urgent need to study the optimum choice and composition of the essential subjects in the aspect of their usefulness for the future activities in school. As well, the formation of the personality of the future teachers is not only a very important problem but also a very difficult and a very complicated one. In the didactical process we should form self-reliant thinking, criticism, self-criticism and dutyfulness, which are the fundamental engines of the father professional perfection. In the domain of forming the above mentioned features classes in physics didactics are playing the fundamental role. I'm thinking here as well of the theoretical classes like discussion, discussion of the conspectus of a lesson as, above all the practise - the tentative lessons.

It seems to be a certain tendency to overestimate the value of the lecture in physics didactics, which is connected with the tradition of lecturing in the universities but also with the actually position of the didactic of physics, as a general theory of teaching and learning physics. But, how it said Pestalozzi 'the theorie without practise is dead.' She can not be animated even by help of the modern educa-

tional technology. For that reason settle of a contents of the lectures without connecting them with classes is condemned to a lack of success./Recently we shorted the number of hours devoted for lectures in physics didactic to advantage classes/.

At first we should select the contents of the whole subject and divide it to themes which should be realized only on the lectures or on the lessons and to themes which could be realized on the lectures and the lessons. The cardinal criterion for such a selection are the operative aims, which determine the examination standards and also our realisation - time possibilities. In my opinion, the lecture is suitable only in a few exceptions, when:

1/ In the opinion of the lecturer, the theme has not sufficient reflection in manuals /textbooks/ of didactics and this theme requires changes in conception or requires a considerable enlargement.

2/ In the lecture we are presenting the results of our own research work or our own opinions different from generally accepted.

3/ The lecture introduces the classes or has an recapitulated character and

4/ The number of students groups is too high or the realisation time makes impossible the replacement of the lecture by discussion.

The next problem is connected with the composition of earlier selected didactical contents. Because of the complicated logical dependences such a composition is always, to a certain degree, discutable. A big influence has here the succession for preparation of the adequate material for classes and also the possibility to make a quick arrangement to lead probational lessons. For our aims we were proposing the following:

I. Acquaintance and understanding of the general theorie of teaching and learning physics in the primary and secondary schools at such a degree which makes possible a correct organisation of the teaching process.

II. Ability to have a critical glance and an independent achievement to estimate the teaching theorie and practice and to substantiate the own opinions in a discussion.
III. Ability to self-reliant organisation of the process of teaching physics in a primary, secondary and also vocationary schools.

To each point we can formulate the particular operative aims. With respect to the first point we can move forward the following operative aims:

I.1. Knowledge of the fundamentals of the methodology of physics.
2. Knowledge of the concept and the role of didactic of physics.
3. Knowledge of the contemporary tendencies in didactic of physics.
4. Knowledge of the didactical aims of teaching physics and of the ways of their realisation.
5. Knowledge of the didactical structure in teaching physics.
6. Knowledge of the main ways of thinking, algorythmic and heuristic processes and their utility in teaching physics.
7. Knowledge of the rules of teaching and of the postulates of the contemporary didactics of physics.
8. Knowledge of the methods of teaching with taking into consideration their function in the education the self-reliant thinking with respect to:
   - introducing new material,
   - consolidation and repetition /includet tasks and classes - solving physical problems and carry physical experiments/,
   - assessment of the results of learning and achieved abilities.
9. Knowledge of the types of lessons.
10. Knowledge of physical laboratory safety rules.
11. Knowledge of organisation of the physical laboratory.
12. Knowledge of the classification, requirements and the role of the didactical aids.

13. Knowledge of the forms of organisation of the students activities during the physics lessons.
14. Knowledge of the ways of working with weak students and also with high talented students.
15. Knowledge of the specific of teaching in various types of schools.
16. Knowledge of the forms of control and estimation the results of the students work.
17. Knowledge of the fundaments of the methodology in the domain of didactical research on teaching physics.

To the second point we move forward only three, but very important operative aims:

II. 1. Ability to convey methodological analysis of each part of the textbook for primary and secondary schools and also, to dicover the eventually appearing mistakes and errors in the domaine of the structure of the book. Ability to marking out the main points /knots/ of these structure /main concepts and fundamental laws/.
2. Ability to independent estimate /with substantiation/ of a conspectus, plan or description of a physics lesson. It concerns also to the seen lessons in vivo or seen the filmed lesson.
3. Ability to estimate and control criterion and a test, and on this basis to put out the mark.

To third point we propose the following operative aims:

III. 1. Ability to a correct projection and realisation of any lesson in the range of introducing new material in the primary and secondary school.
2. Ability to support such lessons on the fundamental teaching methods, ways of thinking and different organisation forms of the students work.
3. Ability to plan and carry a recapitulating lesson supported with a talk or with cyclic laboratory experiments.
4. Ability to plan and carry a consolidated and syn-

thetic lesson.

5. Ability to plan and carry a lesson with a film /TV/
6. Ability to plan and carry a laboratory lesson /supported on different methods/.
7. Ability to introduce a simplificated discussion about the measurements errors appearing in laboratory experiments.
8. Ability to plan and carry tasks and problem solving lessons.
9. Ability to plan and carry of excursions.
10. Ability to programme a part of a physical text.
11. Ability to organize the learning activities beyond the lesson.
12. Ability to carry the physical experiments.
13. Ability to organize a physical laboratory.
14. Ability to plan a didactical test.

The above described operational aims may be they should be completed. They are not so easy to obtain, but I'm confident that they give us the guarantee of a properly methodical preparation.

Here some themes of the lectures on didactics of physics devoted to our sunday-students:

1. Didactics of physics as a study subject; new tendencies in physics didactics.
2. The aim and the contents of teaching physics.
3. The theoretically - cognitives and the psychological basis of teaching physics.
4. The role of mathematics in teaching physics.
5. The process of teaching and learning physics.
6. Methods of teaching and learning physics by AV aids.
7. Types of thinking in learning physics /introductory lec./
8. Models in teaching physics.
9. Classification of methods of teaching physics/intr.lec./.
10. Problem solving method in teaching physics/intr.lecture/
11. Problems and quasi-problems in teaching physics.
12. Types of physics lessons /intr.lect./.
13. Classification of physical experiments.

14. Methods of physical experiments.
15. The function and the classification of the physical tasks.
16. Methods of solving of the calculation tasks.
17. Methods of solving of the noncalculation tasks.
18. Programmed learning /summarising lecture/.
19. Computer experiments. Using computers in learning phys.
20. Control of obtained didactical effects /knowledge and abilities/.

3. Some remarks from the research on the problem "how really is our school-leaving student functioning as a physics teacher?"

Between 1980 and 1985 a group of physics didactitions and sociologists under my control wanted to answer the following question:
"how are the physics teachers prepared during the study time to perform their professional tasks, such as: didactical, educational, tutelary and social tasks in their environment?
Here, there are only some conclusions:
1/ The majority of the investigated teachers has not been sufficiently prepared to self-reliance in mastering and acquiring to themself the lacking knowledge. They cannot substantiate why people should learn physics, why they should teach it.
2/ The preparation of the investigated teachers to realisation of teaching physics is rather weak /too short school practise, too weak contact with the school during the study time/. They are not interested in new methods of teaching physics, like educational games, thinking experiments, games and experiments by using microcomputers etc.
3/ Their preparation to perform the educational and social tasks carried out from the university is completely insufficient.
4/ Their preparation to perform the tutelary tasks is insufficient, too.
5/ The level of motivation of the investigated teachers to

do their duties is sufficiently good, but there are still many accidental teachers, from whom a part would like to change their profession.

6/ We prepare teachers to teach one subject /physics with astronomy/, but almost each from the investigated ones from the primary schools was teaching besides physics another subject.

Ladies and Gentlemen, I tried to present you a very short outline of some problems and the organisation of the essential and professional education of the teachers of physics in my Country. I would be very glad to answer your questions and hear your problems about this matter.

Thank you very much for your attention.

Abstract: Essential and professional education of the physics teachers in Poland, K.A. Badziąg, Gdańsk Uni

In the report there has been described Polish school-system and analysed the problems connected with the education of physics teachers, which should be prepared to act in schools the didactic, educational, protective and social tasks.

Kazimierz, Antoni BADZIAG, born 1921 in Tczew by Gdańsk, make M.A. in physics at the Pedagogical High School in Gdańsk, PhD. in didactics of physics. He is now leading the Section for Didactics of Physics at the University of Gdańsk in the Institute of Experimental Physics. He is the author of an university textbook "Methods of teaching physics at the secondary school level" and many other books and articles, about 100, connected with didactics and the history of physics.

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VOCATIONAL TEACHING

AT A DISTANCE

THE NEW ZEALAND PERSPECTIVE

Paper for UNISA Conference
Pretoria 18-21 May, 1987

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NEW ZEALAND

New Zealand lies in the south-west section of the Pacific, 1600 km east of Australia. It comprises two main islands and is roughly the same size as the British Isles or Japan. New Zealand is long, thin and mountainous, 1600 km from north to south, but no part is more than 110 km from the sea.

Mountain landscape is one of New Zealand's most striking physical characteristics. Coastal plains change abruptly to hills and rugged mountains in the interior. This relief has contributed to uneven population distribution and has made transport development difficult. Many parts of the country are remote from major centres.

Of New Zealand's 3.2 million people, 86% are of European, mainly British, descent. The indigenous Maori people of Polynesian origin are the largest minority (about 9% of the total) and there are smaller groups of Pacific Island Polynesians, Chinese and Indians. English is the first language of almost all.

Most New Zealanders (75%) are in the North Island, which contains the largest city, Auckland (1982 population 840 000), and the capital, Wellington (1982 population 343 000). Most settlements are on or near the coast. Large areas of the interior of both islands are sparsely inhabited.

New Zealand is distinctive among developed nations for its efficient farming sector and therefore its reliance on world trade. On a per capita basis, New Zealand is one of the leading trading nations of the world. As a trading nation, New Zealand requires an educated and highly skilled workforce.

The New Zealand State education is based on the principle that every person is entitled to free primary and secondary education. Education is freely available at all levels up to and including universities. Few countries have a larger proportion of the population at schools, colleges, and tertiary institutions.

In line with this principle that full education be extended to as many as possible, the State established

The Correspondence School in February 1922,
The Technical Correspondence Institute in 1946, and
The Massey Centre for University Extramural Studies in 1960.

Between them they provide distance education from preschool and special education, through primary and secondary education, to technical, vocational and university degree courses. The three institutions co-operate closely to avoid duplication.

THE NEW ZEALAND TECHNICAL CORRESPONDENCE INSTITUTE

NZTCI is charged to provide vocational education for all students within New Zealand who for various reasons find distance education more appropriate to their needs or cannot attend a class-contact institution. Our main purpose is to train, retrain and educate people for service in industry and commerce.

NZTCI is the largest teaching institution in New Zealand. We employ 500 full-time staff (400 teaching and 100 administrative and production staff), and we teach 34 000 students in 940 subjects, including trades, engineering, agriculture, horticulture, accountancy, law, banking and management. Although we are only one of 21 technical institutes and community colleges, our students make up about one-third of all vocational students enrolled in New Zealand.

Organisation

The Principal is the academic head and chief executive of the institute. He is assisted by a Deputy Principal, a Second Deputy Principal, and a Registrar. Each of the 14 teaching departments consists of a Head of Department, 3 or 4 course supervisors and up to 40 tutors. The administration staff — clerical, production, printing and accounting — is under the control of the Registrar.

Students and enrolment

The annual enrolment is about 34 000 students. They can enrol at any time of the year. The criteria for enrolment are that students must be over 15 years of age and reside more than 16 km from any class-contact institute offering the course.

In spite of this 16 km restriction, about half of our roll consists of urban students, but they must first get clearance from the Principal of the class-contact institute in their district.

In general, our students are already employed in an occupation related to their course of study.

About one-quarter of the students are apprentices studying trades, one-quarter taking technician courses, one-quarter studying for a professional qualification, and the rest studying for various qualifications at sub-professional level.

All students are part-time. Nearly a quarter are aged over 30, many of whom are upgrading their present qualifications. Women comprise only 20% of the roll, but this proportion is steadily increasing. The great majority are studying for national qualifications which are examined externally to TCI.

Courses

NZTCI provides vocational courses only. Almost all courses are directed towards national qualifications issued by various statutory bodies such as the NZ Trades Certification Board, the Authority for Advanced Vocational Awards, the Society of Accountants, and the Law Society. The bodies set the prescriptions and the examinations on which the institute bases its courses. In addition, NZTCI teaches courses to a small number of non-examining bodies and issues an NZTCI certificate to successful students by accreditation (for example, Royal NZ Federation of Justices).

Most NZTCI students are studying for the same national examinations as those in class-contact institutes.

NZTCI SYSTEMS AND PROCEDURES

The teaching system

The printed assignment is the main method of instruction. Each subject of each stage of a course is covered by some 8 to 14 printed assignments. Most assignments are fully independent, textbooks being required only for supplementary reading.

The course materials are planned, written, edited, illustrated and printed to be clear and easy to follow. Each assignment of a course is structured to resemble a series of classroom lessons — each with learning objectives, fully illustrated content and discussion, summaries of main points, revision questions and answers, and ending with questions designed to draw out the content of the assignment.

Students' work is given careful attention and is promptly returned with tutorial guidance and a set of answers.

The whole system is based on self-paced personal instruction. Students study up to five subjects at a time. They can start at any time of the year and study at their own pace, within generous limits. Most examination prescriptions do require them to complete 80% of the coursework before they can enter for the examination.

The delivery system

The NZ Post Office provides the delivery system through its comprehensive daily coverage of all districts. NZTCI materials are delivered by surface mail, normally taking 1-3 days to the most remote areas. Overseas students are serviced by airmail, paying the airmail costs. The institute pre-pays all surface mail both to and from students. Post Office charges to TCI amounted to $400,000 in 1986.

Teaching the practical component

The printed assignments are supported by other media. Students of many courses are required to attend laboratory or fieldwork courses or attend block courses in practical work each year in addition to their assignment work. This practical work is covered in four ways:

1. Trades students are directed to the nearest class-contact institute for a 3-6 week practical course in each of their 3 years of study. Having access to TCI course material, the local teachers can teach the practical work in a way that supports the TCI course material.

2. Technical and professional students, at appropriate stages of their course, are directed to the Central Institute of Technology to do their labwork and fieldwork. The Central Institute of Technology is located in the Wellington area 10 km from TCI. It has the necessary residential halls and laboratory equipment to accommodate TCI students. Some of these courses are run by TCI teachers and all students are visited by their TCI teachers while attending the practical course.

3. TCI holds some class-contact courses that do not require workshop or laboratory equipment.

4. As most of our students are employed in their field of study, they experience practical work daily in their employment.

Some students are required to complete practical aspects of their assignments in the workplace. Sometimes, larger companies collaborate with TCI to supplement its correspondence teaching. Correspondence work can be supported in the workplace in many ways, depending on the particular needs and circumstances of the employer's business.

Teacher training

Almost all our teachers are recruited from industry or commerce. Few have had teaching experience and even fewer any teacher training. All newly appointed teachers are entitled to 6 weeks of teacher training. A training course for distance educators, developed at TCI, is administered by our Education Resource Unit. The course draws on the expertise of experienced teachers from within TCI. It is organised around self-instructional material, combined with one-to-one support sessions and group workshop sessions. New teachers therefore study partly by the same medium with which they teach.

Our course is based on a series of topic-based modules. Each module, self-contained instruction on a distance education topic, takes some 30-50 hours of study time.

Each module is divided into 3-5 units of 8-12 hours' study. Each unit contains learning objectives, teaching material, and an assignment to be written and returned to the training staff.

With the modular design, we can use the modules both as the parts of the full course for new teachers and as single resource items for seminars, workshops or study groups with other teachers.

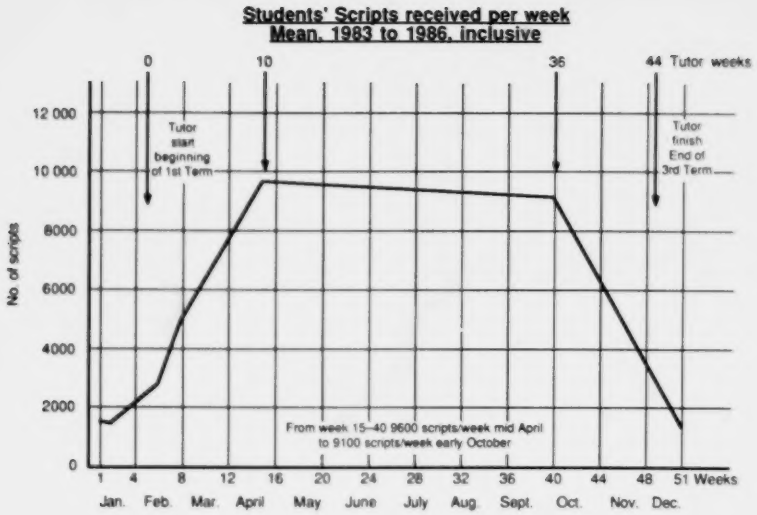
Teaching duties

Most NZTCI teachers need to be versatile. Over a period they will have marking duties, write new assignments, revise or amend existing assignments, and technically edit assignments written by colleagues. They may also construct an audio tape, teach at block courses or seminars, or represent the institute at meetings of trade or professional organisations. Many also serve on prescription committees for examining bodies. Each group of teachers is supervised by a course supervisor, who in turn is responsible to one of the 14 Heads of Department.

Processing students work

Over 400 000 students scripts are received each year. Figure 1 shows the weekly flowrate of scripts received through the year.

The graph shows that the minimum flowrate is about 1500 scripts/week during the Christmas period. Some teachers continue working through the Christmas period to keep the students in work. The flowrate builds to a maximum of 9600 scripts/week in April and runs at over 9000 scripts/week into October. These scripts are received in the mailroom, where they are opened and distributed to teachers.


Students' Scripts received per week
Mean, 1983 to 1986, inclusive
0
10
36
44 Tutor weeks
12 000
10 000
8000
6000
4000
2000
0
No of scripts
Tutor start beginning of 1st Term
Tutor finish End of 3rd Term
From week 15–40 9600 scripts/week mid April to 9100 scripts/week early October
1 4 8 12 16 20 24 28 32 36 40 44 48 51 Weeks
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.

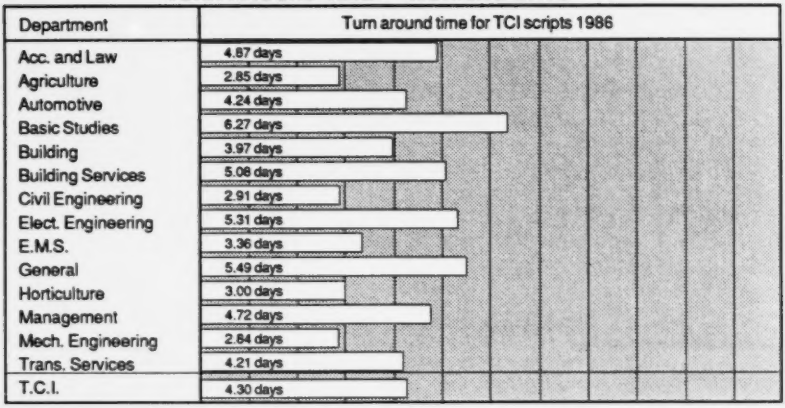
Each script is given careful attention by the student's tutor. The script is marked, commented on, and an assessment of it is recorded. It is then passed to the assignment store, together with instructions on which assignment is to be sent to the student next.

The assignment store assembles a package of the marked script, the tutor's comments, sample answers, a new assignment, and a coded envelope on which the student will enter his or her address. The package is dispatched in the envelope which the student sent with his or her last script. This procedure keeps clerical work to a minimum.

Turnaround time, that is, the total time that a script is in the institute from its arrival in the mailroom to its dispatch from the assignment store, is monitored regularly. The following table lists turnaround time for 1986.

Turnaround time was measured in working days from receipt at records to dispatch from the assignment store. The average turnaround time in 1986 was 4.30 days. Department turnaround time ranged from 2.84 days to 6.27 days.

TURN AROUND TIME — WORKING DAYS



Student contact

In addition to the normal correspondence between students and teachers, students are encouraged to use the telephone to contact their teachers, and many call at TCI for informal discussions with their teachers.

Writing and course production

NZTCI, being a teaching institution, does not set the prescriptions for courses leading to national qualifications. The examining bodies set them. NZTCI can introduce new courses only with the approval of the Department of Education.

When a new prescription has been approved, a course supervisor in the subject usually appoints a writer and a technical editor to draw up a writing plan for the course. The Second Deputy Principal considers the writing plan and may require it to be further discussed or amended before approving it. The Second Deputy Principal is responsible for allocating writing priorities among the 14 departments and establishing the institute's annual writing programme. At present, NZTCI writes about 800 new assignments a year and amends about 1600. Present stock stands at just over 9000 different assignments.

Whenever the writing plan for a new assignment is approved, the writer has to complete the assignment draft. The draft may be handwritten or done on a wordprocessor. IBM-type machines, with many popular software packages, are used for writing.

When completed, the author's draft is examined by the technical editor and is checked by the course supervisor. The writer then discusses illustration requirements with the art editor.

The assignment is then logged into the production system and passed on to a specialist group of presentation editors. A presentation editor checks and amends the assignment to make it concise, clear and readable and with good teaching structure. After a check by the writer and any needed discussion with the editor, the assignment is typeset and illustrated. We use Apple Macintosh computers with Pagemaker and Microsoft Word software. Both proof and final copies are produced on a laser printer.

The typeset proof is checked by a specialist group of proofreaders, again checked by the writer, and corrected.

When the illustrations have been mounted in the final copy, the writer makes a final check. The assignment is printed on the premises. The printed copies are kept in the assignment store for issue to students.

Reprints are normally scheduled on a 12 month cycle, but master copies are amended continuously (about 1600 per annum). Our large well-equipped printing plant is capable of printing one million pages a week.

Evaluation and assessment

Although NZTCI is not an examining authority, many examining bodies do not set examinations at the lower stages of a course. We are thus required to assess students' work. The teacher assesses every script submitted by a student and, at the end of the subject or stage, makes final assessment based on the records of all assessments. The final assessment goes to the examining bodies either as a final result or as a coursework mark as part of a final examination.

In general, final results are used for lower or intermediate stages of a course and coursework marks are combined with the marks gained at final external examinations.

The external examination results conducted by the various authorities, at whatever level of difficulty, almost always show that distance education students from TCI have an average pass rate higher than the average for New Zealand.

The courses and teaching material are constantly evaluated by the Principal and senior management in response to feedback from industry and commerce as well as from examining authorities. This attention is clearly reflected in the examination results of our students.

In conclusion

We do not pretend that we have all the answers, and we acknowledge that we are only beginning to use the new technologies. However, we have learned much in 40 years, mainly through trial and experiment, and have developed a system that is cost effective and efficient. The main strategies of our system are

1. ***Self-paced personal instruction:*** Our students can enrol at any time, study at a time and place that suits them, and work completely at their own pace.

2. ***Teacher training:*** Our teachers, who are recruited from industry or commerce, receive 200 hours of training in a course designed for distance educators.

3. ***Communication with students:*** Our teachers are encouraged to communicate with students in a warm, friendly, personal manner. The turnaround time of scripts is monitored regularly — at present it is 4.3 days.

4. ***The written word:*** We believe that the written word is the most effective teaching medium, and we have concentrated on making our written assignments concise, clear, and readable.

5. ***The practical components:*** We recognise that practical training is vital in vocational work. We use a variety of methods: on-the-job training, laboratory courses, and a network of block courses at institutes throughout New Zealand.

6. ***Evaluation:*** Most of our students sit national examinations that are externally controlled, and senior management are constantly responding to feedback from industry and commerce as well as students.

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PRINCIPLES AND PRACTICES IN DISTANCE EDUCATION

Faith B. Collins
University of Victoria

The history is brief, the event current, a milestone accomplished.

These three phenomena originated at the University of Victoria, Canada, during this decade. The milestone referred to is Registered Nurses living and working in remote and urban communities, studying towards their baccalaureate in Nursing through the use of non-traditional education.

This paper addresses a significant problem, a problem common to most universities planning for the 21st Century, namely to provide professional degrees to learners distant to the educational institution.

The University of Victoria has a reputation for being proactive and reactive to the needs of Registered Nurses throughout British Columbia. In particular, the University has a long history of providing continuing professional education to nurses.

Traditional methods of providing education to nurses at a distance were utilized, in particular, having instructors travel to students for face to face instruction. Although effective, this strategy is limited. University professors are not always available when desired in rural communities, the number of communities served by face to face instruction is limited and the cost of serving small numbers of students in this manner is prohibitive.

Six years ago, the University of Victoria experimented with the use of satellite telecommunication as a means of information dissemination. The use of extra terrestrial bodies, eg. artificial satellites, is having a significant impact on nursing education and practice. Access to a federal satellite

through a public education broadcast station was the solution to the problem. Local cable companies carry the signal in rural communities.

This technology is effective because British Columbia is one of the largest of Canadian provinces consisting of 366,255 square miles which includes several islands. The crest of the Rocky Mountains is the interprovincial boundary separating British Columbia and its neighbouring province of Alberta on the east. On the west, British Columbia is bound by the Pacific Ocean. Except for the north-east corner of the province, which is part of the interior plains, the remainder of the province is mountainous. All of the universities are situated in the southwest area of the province. This province has a population of two million, nine hundred thousand of which twenty-eight thousand are registered nurses. Nearly fifty percent of the nurses reside outside the urban centers and have great difficulty gaining access to University schools of nursing. To date, only eleven percent of nurses are prepared at the baccalaureate level in British Columbia.

British Columbia: Total area: 948 600 km^2 (366,255 $miles^2$) Length of coastline: 12 000 km (7,500 miles) Total length: 1 300 km (813 miles) Total width: 700 km (438 miles).

Experimentation with televised broadcasts for nurses, using Satellite Communication occured in September 1980. The use of media and the process of course development and delivery has evolved to a sophisticated level. Initially courses had a significant amount of dependence on the new medium of tele-

vision including two hours of live interactive broadcasts per session. Over time, this has shifted to the use of multi media curriculum approaches of which pre-recorded television is one component.

To extend the frontiers of academic borders, ideas, plans, and resources inclusive of fiscal, technical and human were marshalled. Individuals with specialized expertise were harnessed into project teams to develop and deliver a quality product, nursing distance education.

The process consists of two phases: development and delivery.

In the development phase, a project team consists of: a manager who is responsible for the overall administration of the project inclusive of the budget, time line and project evaluation for both the development and delivery, a content specialist who is responsible for providing the academic content of the course which includes the two phases of development and delivery, and the other key member of the project team is the distance education specialist who functions as an instructional designer for the development phase only. There are other production specialists who participate in the project development phase to provide technical expertise in the use of computers, audio and video production.

All courses use a multi media approach. During the development stage, all aspects of the curriculum are prepared. Before the actual development of the curriculum takes place, there are very crucial steps required. The initial step is initiation, the starting point in the process which results in a course for learners at a distance. A specific course is identified for which there is an established need and qualified instructor (content specialist). The instructor may hold an appointment at the university or be an external appointment. At this point, there is a promise of human resources but no investment yet.

The second step is planning. A proposal is prepared to submit to a committee which approves funding for courses involving distant learners. This proposal includes two key components, one of which is a budget for course development, and the other a time line. Both time and money are resources

where idealism and realism often differ. This stage is critical. As resources are finite, several faculties, schools and departments vie for these resources. As such, a committee adjudicates proposals using criteria to assess the priority of requests. Approved proposals progress to the strategic stage, development. At this point, planning for multimedia curriculum approaches requires the use of technology which interfaces between the distant student and instructor. This technology is invaluable to disseminate information but can only be as good as the message it transmits. It's advantage is that it enhances learning and makes the content more diverse. The development stage is dependent on the human resources to determine the quality of the materials. Each project team member has an unique contribution to make. It is important to build on each other's strengths which has a synergistic effect on the product. The development stage cannot be rushed as it is analogous to prevention being more valuable than treatment.

Concurrent activities during the course development include promotion and publicity, procedures which facilitate student enrollment. Without a doubt, this stage of development is by far labor intensive and consumes the entire development budget.

Once development is complete, inclusive of print materials, a study guide, book of readings, audio tapes, pre-recorded video tapes and textbook ordered, the next step is implementation or delivery. This stage has a separate budget. The project team disbands, only the content specialist and project manager continue with the project. A distinct difference between the development and delivery budgets is that the latter generates revenue from student tuition. Administrative procedures established in the development stage are activated. Information management systems are in place. The flow of communication between students and the university is documented as accurately as a bank monitors their deposits and withdrawal. Marketing during development usually results in an excess of one hundred students for which there is a minimum of three processes including admission, registration and assessment of assignments. This almost concludes the life cycle of distance education course development and delivery but there is one remaining step which is very important, evaluation. Evaluation is both last and first. It is a broad based process by which intended and unintended

outcomes of the educational initiative are assessed.

This grid indicates the various multi media components planned and designed during the development stage.

Degree Area	Media Print Pkg	Public Television Broadcast	Video Cassette (Non-Broadcast	Audio Tapes	Faculty Contact
BSN	X	X		X	X
	Tele-Conferencing	Tutor (Telephone)	On-Site Tutorial (Learning)	Infoline Library Service	Textbook
	X	X	X	X	X

The media print package is not a traditional correspondence course. Instead, it is an interactive and integrated learning component. The package consists of an administrative section, session objectives, pre- and post-viewing activities, video session outline, and session questions from which the examination questions are taken. A second print component is required readings. Copyright permission is obtained for the use of articles from journals and other publications that the content specialist deems as essential to the course content.

The second strategy, is a public television education network which can be received by cable in 247 communities throughout the province. The two major cities of Victoria and Vancouver require a converter for their televisions to receive the station. All broadcasts are pre-recorded in a television studio on campus or on-site locations such as hospitals or community settings. Each televised session has two broadcasts, one of which is evening prime time. We have evolved from two and one half hour live broadcasts delivered to selected receiving sites, to one hour pre-recorded sessions received by the vast majority of homes throughout the province.

Students unable to view initial or repeat broadcasts can use a video recorder for their convenience. Recorded televised broadcasts are a valuable asset for adult learners who wish to view the program at their convenience and as many times as they choose. This is an advantage that students on campus do not have unless they audio tape their classes. The number of televised sessions varies for each course depending on what is to be accomplished. Televised sessions should be used to demonstrate or explain concepts that are not readily learned by print. They often depict skills such as communication, group interaction, or interviews of guest experts. This visual medium provides a bonding by voice and image for learners with their instructor.

The next strategy, video cassette, is not generally used by nursing but other faculties send video tapes to liaison persons in communities making them available to students at their convenience. They do this instead of broadcasting the videotapes. In nursing there are a few exceptions. Students who are temporarily out of the province or living in communities that do not receive the television education channel are sent copies of the pre-recorded programs on video tapes.

Audio tapes are used in some courses. They are helpful for discussions or information which may be explicit and not suitable for public broadcast. As well, it gives instructors an opportunity to discuss case studies in a less expensive medium than television.

Faculty contact is provided through written communication as well as other means. The print package familiarizes students with their instructor by including their picture, nursing background information and interests. Contact is also made by mail. Students and instrucor interact through assignments and progress reports. A primary contact between students and their instructor is teleconferencing which is available free to students for one hour after the televised program. Students call collect from their homes to the instructor's residence. The telephone bridge can accommodate up to nine students and the instructor. Should more lines be required, this can be adjusted upward to accommodate twenty. Some students use the teleconference to listen to the interaction among the other students and instructor. Dis-

tance education students do not necessarily actively participate, which is also the case in on-campus classes. Evaluations indicate that those students who use this medium of contact with their instructor find it extremely valuable especially those students who do not have classmates in their communities. There are two other weekly scheduled times that students may have contact with their instructors by telephone but the calls are at their expense.

Infoline Library service is available for all distance education students. As part of a support system, a professional librarian and assistant librarian receive telephone or written requests for supplemental, optional reference material which is mailed to students. All required readings must have copyright clearance and are included in a readings section of the print materials.

Textbooks are required for most courses and are referred to in the study guide.

All of these strategies create a synergistic affect in that the sum of the parts is greater than the whole. The development of these strategies is enormously consuming of fiscal and human resources.

All courses are evaluated during and/or at their conclusion. This is done to determine how well the objectives were met. Nearly all are formative designed to gather information on students' reactions to each curriculum component and media medium, administration of the course and students' evaluation of instructors' capabilities. This information is used as an important part of the considerations for revisions to courses for future delivery.

The most difficult challenge that we faced to date was the development and delivery of clinical courses: In doing so, it raised the following questions: What is appropriate content for a third year practice course for registered nurses? To what extent should content and objectives follow on-campus courses? Is it possible to teach skills in absentia? A second cluster of questions centre on the role of the tutor. Should on-site tutors be used to teach, to monitor, and/or to evaluate? What background experience and qualifications should tutors have? Should they be trained, and how? Evaluation of learners subsumed a series of related issues including who should

evaluate? What should be evaluated? How should it be done? Should students come together for testing? Is a paper test such as a case analysis sufficient? Most of these questions have been answered to our satisfaction and are not necessarily unique to students learning at a distance.

Does this effort really make a difference? Our experience at the Univerity of Victoria indicates it is unequivicably successful by all measures. This year, seven hundred fifty-nine registrations by nurses living and working in their own communities atest to the need for distance education. Each month forty to sixty packages of information and applications are sent to students enquiring about the program, the majority are admitted to the university.

Continuous development and delivery of nursing courses has led to the availability of the entire degree available to Registered Nurses entirely by distance education. It is no longer necessary to attend classes at the University to progress from the R.N. to the B.S.N. level. Elimination of this requirement enables nurses to maintain their residence, employment and organize their own learning.

Enrollment in the nursing courses has risen steadily. Although students may be solitary learners in their community, each course has approximately one hundred and twenty-five registrants throughout the province.

Having described the process of development, delivery and response to this service, a critique is in order. Although there are a number of advantages which will be enumerated, a balanced analysis is important. There are barriers which must be overcome. First there must be a strong desire by schools of nursing to take on such a commitment which affects their resources. Once commited, university requirements that inhibit students at a distance must be removed. An example of such regulations is residency requirements, and fixed admission dates. Valuable time spent developing courses equates with writing a textbook. University reward systems recognize the importance of research and publication. Production of courseware does not receive the same recognition. Some faculties are beginning to address this issue as it relates to promotion and tenure.

Potential students living in remote communities do not have contact with a university or university students. Mature students often feel inadequate in initiating the learning process and require much encouragement. Initiating the first contact is a major accomplishment for some students. Initially students feel a sense of isolation. As confidence builds, students will initiate more contact with other students, instructor and the university.

Althought students receive class lists and are encouraged to form study groups and interact through teleconferencing, it is not always possible or desirable. Intervening variables are: no other learners within commuting distance, twelve hour shifts, scheduling problems and ineffective study groups. Lack of frequent contact and sharing of learning experiences are problematic to some students.

Students are encouraged and expected to practice their new competencies. Because of the small percent of registered nurses with education at the baccalaureate level, this is difficult. Colleagues and superiors often do not understand and sometimes resist changes in the status quo. Increasing numbers of students who are prepared at the degree level will overcome this in time.

These barriers are being addressed. A support system of University Extension emmissaries is being planned. Students who have completed several courses by distance education will act as peer counsellors for new students embarking on university study.

The Canadian Nursing Association in 1982 declared the minimum level of entry to practice as a professional nurse will be at the baccalaureate level. This statement has put pressure on practitioners to further their education. Some, especially those in leadership roles, head nurses and supervisors feel their jobs are threatened if they do not pursue their education.

Profiles of our students learning at a distance indicate the students are older than on campus nursing students, have more children and community responsibilities. This plus approximately eighty percent were educated in hospital Schools of Nursing as opposed to community colleges. Although these factors

may not necessarily be considered as barriers to learning, combined together they result in students who have been out of school for many years, whose writing skills are frequently less than required of third and fourth year university students. Many assume learning as an additional responsibility and do not adjust their lifestyles accordingly. Writing skills can be improved by registering for an English course taken through a local community college or by correspondence. This will provide them with sufficient writing skills for nursing courses. In spite of age, isolation and other barriers the students learning at a distance possess the characteristics of adult learners. Once they have chosen a goal, they are extremely motivated. Nursing students in particular have a very low attrition rate.

Other barriers to distance education are the dependence for service on many individuals and services. Inadequate service by the post office frustrates the process of admission and student feedback and evaluation of assignments. To overcome these lengthy delays for delivery of mail, I hope to implement the use of electronic mail. Occasionally there are other frustrating events beyond the university's control such as an interruption of service provided by cable stations. Although these events happen infrequently they affect large numbers of students who are trying to adhere to tightly scheduled courses.

There are other barriers for students who are unable to attend campus but they are minor compared with the advantages of distance education. These advantages are categorized as student centered and institutional, in some instances they can be both.

Student Centered

Without distance education, many nurses would not have access to university education because of their geographic location, employment, family and/or community commitments.

Students living in Victoria take advantage of distance education courses because they are unable to attend campus courses for various reasons.

Courses offered to students at a distance are directed to professionals currently practicing their profession who are stable community members unable to relocate. Distance education recognizes their important role in these communities.

Following admission to the university and the school of nursing, nurses register for a course and proceed towards their degree at their own pace. Those students who wish to accelerate in the program can choose to attend the university for a particular term. Although students have six years in which to complete their degree, many satisfy the requirements in four or five years. This is usually done by attending summer session on campus.

Cooperation by several instituitions that provide courses to students at a distance can result in learners having a wide selection of courses not otherwise available at the local level.

For new students returning to learning, they often lack confidence. Learning at a distance has the advantage in that instructors cannot see them or call on them for a response.

The use of television as a component of information dissemination results in students developing an attachment to their instructor similar to fans of television personalities. Students identify not only through the television medium but also through teleconferences and have a sense of belonging to a class.

Many students record television broadcasts which enables them to hear a particular session at their convenience or repeat the session to reinforce the information. This way the student controls the information dissemination.

Institution Centered

Educational courseware has a shelf life of three to five years before requiring revisions.

The product, educational courseware, can be revised for subsequent course offerings. The cost of development can be amortized over the shelf life of the materials and future revisions are less demanding of resources than the initial development.

By addressing the issue of access to higher education, immeasurable goodwill is created for the university at a time when higher education has mixed reviews by the general population.

Distance education captures adult students interested in life-long learning at a time when there are declining members of high school graduates attending universities.

More registered nurses reside in the non-urban areas of the province than in the cities of Victoria and Vancouver where the university schools of nursing are located, thus the potential students can only be accessed by distance education methods.

If the number of applicants to the degree program wanted to attend on-campus, they would exceed the available resources on campus. Distance education is the only tenable way to accommodate the large numbers of students. The economics of distance education can be justified by attending to the needs of large numbers of disperse students.

Instructors use their courseware on campus to augment their classroom teaching or when the instructor is absent due to illness or professional activities.

Instructors who have prepared study guides for distance education courses find their traditional classroom teaching is better structured because of this experience.

Faculty associations are assured that media enhances instruction, it is not intended to replace instructors.

Course materials can be used for cooperative sharing of courses by institutions which specialize in certain programs or courses.

Following delivery of a course using print and media technology, the educational courseware is marketed to other educational institutions. The cost of purchasing a course is significantly less than each institution developing a similar course.

Both Institution Centered and Student Centered

Satellite telecommunication can serve a disperse population in a large geographic area.

Distance education is used to equalize services to areas throughout the province where higher educational institutions do not exist.

There exists a wide discrepancy in the ratio of students who attend university from the large metropolitan cities of Victoria and Vancouver versus the non-urban centres, the introduction of distance education was to address this imbalance thereby increasing greater representation from rural areas.

In conclusion, it is indeed exciting to be involved with the latest technological inventions and apply them to a worthy social benefit, education.

Distance Education is a vital mechanism through which Registered Nurses can work towards a Baccalaureate in Nursing to meet the recommended minimum level of practice as determined by the Canadian Nursing Association.

The creation of systems intended to make nursing education more accessible is both a challenging opportunity and obligation for universities preparing for the 21st Century.

The University of Victoria, by removing barriers, has met this challenge enabling registered nurses access, through distance education, to a baccalaureate degree regardless of their geographical location in British Columbia.

This successful initiative provided the empitus for our university to host, in June 1985, the First National Conference on Distance Education in Nursing in Canada. An outgrowth of this conference is a periodic newsletter on distance education nursing initiatives.

The 1987 challenge facing the University of Victoria is the expansion of the distance education program to all registered nurses throughout Canada in collaboration and conjunction with other university schools of nursing. In doing so, we are preparing to meet the need of nurses and health care providers in the 21st Century.

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PROVIDING A REALITY BASE FOR YOUR QUALIFICATION

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1. INTRODUCTION

It is internationally accepted that South Africa delivers the best mining engineers in the world. A mining engineering degree issued at a South African university is, therefore, a key to a mining career anywhere in the world.

I had occasion to do an exit interview with a mining engineer a couple of years ago. When I probed the reasons for his resignation he gave the following reason : "I calculated the other evening how many courses I took at university to qualify for my degree - it was 52. I then calculated how many of those subjects I ever had to use in my years with the mine - it was four. Of course, I thought that this was because I was working at this particular mine. I then looked at other opportunities in the mining field and phoned some of the people that studied with me. I then calculated how many subjects I would ever be able to use in the industry, based on this information - it was a maximum of seven. I have therefore decided to seek a lecturing post at University, at least I will have the chance to use many more of the subjects I studied."

This is one example of an education process that did not prepare students for reality - and this is in a profession, the most practical of all education. I am sure that you will be able to name similar examples from your own experience.

This paper sets out to answer the following questions :

- What is reality?
- Sources of reality-based information
- How do we allow this information to infiltrate our curricula?

2. WHAT IS REALITY?

Human kind cannot bear very much reality (George Eliot)

There may always be another reality to make fiction of the truth we think we've arrived at. (Christopher Fry)

From shadows and types to reality (Ex umbris et imaginibus in veritatem.) (Motto of Cardinal Newman)

I do not resent criticism, even when, for the sake of emphasis, it parts for the time with reality. (Winston Churchill)

Just a few perspectives on reality, but enough to point to the fact that it means different things to different people.

Besides these laymen's perceptions, we also have those of the various schools of philosophy. The following is taken from "De wijsbegeerte van die 20e eeuw" by Dr Bernard Delfgaauw. The neo-thomists saw as the cardinal point in their philosophy the question of "being" (the reality of our existence) and found the answer in the process whereby we move from the visible reality (waarneembare zijn) towards the spiritual reality (geestelijk zijn), that expresses itself in thinking and freedom and eventually leads the individual to the acknowledgement of a personal Creator - God.

Neo-kantianism came in two schools. The Marburg school stressed that knowing is not a portrayal of a reality that has outside knowledge, but that knowing is reality itself. The Baden school concentrated on the different forms in which reality discloses itself and why it is impossible therefore, to accept one knowledge pattern (kenpatroon).

Neo-heglianism is represented most purely in the work of Bradley; "Appearance and Reality". For this school the central question was how thought (denken) could reconcile the apparant multiplicity (veelheid) into a unity (eenheid).

Pragmatism is, in essence, an American philosophy. The founder, William James, lay the foundations that taught that true ideas are only those that can be assimilated, acknowledged, and verified. False ideas are those that cannot. Direct experience (and experiment) was therefore the only true reflection of reality.

Irrationalism developed around the central premise that reality is unfathomable, contradictory and absurd. Because these aspects are uncovered by our reason it means that reason itself cannot be trusted, indeed that it distorts and deforms reality.

Several schools, like neo-vitalism, evolutionism and spiritualism, were influenced by the fundamental psychological insights of our century. Their investigation into knowledge concentrated much on the "tools" and methods we have of gaining knowledge i.e. how we see and perceive reality.

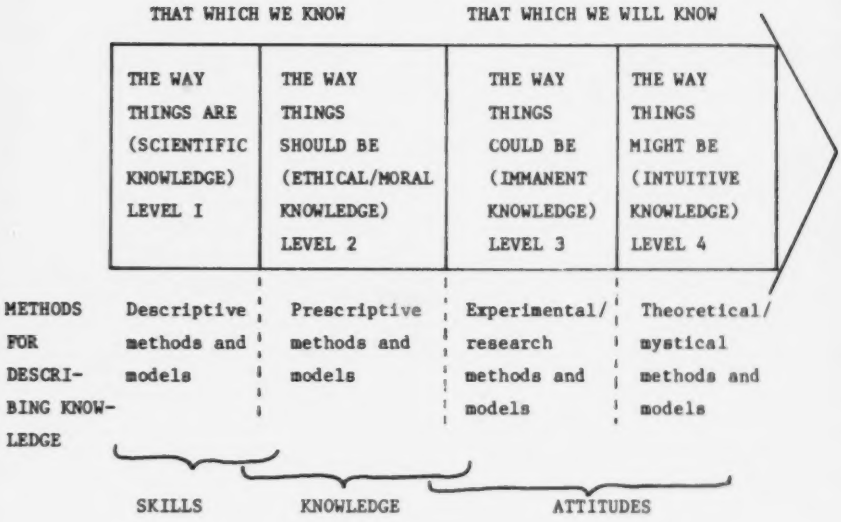
Phenomenology was the last and maybe most influential of all these schools. Martin Heidegger's "Dasein's analysis" is most proabably one of mankind's clearest expositions of how we find ourselves in reality and how we discover our individual being and those that surround us.

The previous paragraphs are enough to show how reality (or that which is) and how we come to know it, dominated 20th century thinking. Suffice to say that knowledge is the only way in which we participate in reality.

It would seem then, that reality consists of what we perceive with our senses and what we create out of these perceptions.

The following model does not pretend to be anything more than what it is - a crutch that served to guide my own thoughts in the building of curricula.

A GROWING REALITY


THAT WHICH WE KNOW
THAT WHICH WE WILL KNOW
THE WAY THINGS ARE (SCIENTIFIC KNOWLEDGE) LEVEL I
THE WAY THINGS SHOULD BE (ETHICAL/MORAL KNOWLEDGE) LEVEL 2
THE WAY THINGS COULD BE (IMMANENT KNOWLEDGE) LEVEL 3
THE WAY THINGS MIGHT BE (INTUITIVE KNOWLEDGE) LEVEL 4
METHODS FOR DESCRI-BING KNOW-LEDGE
Descriptive methods and models
Prescriptive methods and models
Experimental/ research methods and models
Theoretical/ mystical methods and models
SKILLS
KNOWLEDGE
ATTITUDES

Every individual and collection of individuals seems to me to acquire knowledge in this fasion - intuition leads to experimentation and is eventually incorporated into what we all regard as accepted (and acceptable) fact. This process is always dynamic, which means that we are creating an ever growing reality.

2.1 KNOWLEDGE LEVELS

Level 1 : The first and most uncontroversial level of information places us in the province of accepted facts and practices. Some examples would be the concepts and laws we find in the physical sciences, psychology, sociology, etc. In philosophical terms all words or concepts with a corresponding object in reality belong here, i.e. words that can be "pointed" to.

Level 2 : The second level places us in the province of ethical/moral/normative facts and values. Examples would be found in religious, social, political and economic systems that operate from assumptions about the "perfect" state eg. perfect competition, classless society, normal behaviour, etc. In philosophical terms all words and concepts that deal with relations between object words (eg. love between man and woman) or words that add meaning and value to object words (eg. love between man and woman) belong here.

Level 3 : The third level relates to information we are about to have. The province is current experimental and research programmes where possibilities and probabilities are being investigated. In philosophical terms we are dealing with words and concepts adding value or dealing with relations between level 2 concepts.

Level 4 : This level deals with the most controversial information of all - many would deny its existence or say it is non-sense. Here we are in the province where present knowledge technology cannot help us, yet this level often supplies us with the probabilities and possibilities to investigate. Examples are found in mystical thinking and other processes of religious, socio-political and scientific renewal. In philosophical terms, we are dealing with metaphysical information.

3. SOURCES OF REALITY INFORMATION

In order to capture the information flowing from these levels, it is important to tap or tune into the various channels through which this information flows. The channels would seem to me to be defined by the methods for describing this knowledge.

Level 1 : Descriptive methods and models usually make up the bulk of information in our curricula. Textbooks that are generally prescribed would seem to be full of this kind of information.

The most important source for the professions, however, is common practice in the field. The lead time between common practice and when it appears in textbooks often causes concern. Industrial relations practice and industrial relations textbooks are, for instance, often at variance with one another. The curriculum builder, therefore, has to arrange for this source to contribute to the development of his curriculum.

Level 2 : Information is found in prescriptive methods and models. Examples are found in :

- news media
- trade journals
- codes of conduct issued by bodies representing the profession
- government agencies
- conventions and seminars
- individuals and organisations that are setting the pace (the so-called change agents)
- consultants

Level 3 : This type of information is not always freely available. Sources are :

- scientific journals
- research institutions (like the HSRC and NIPR)
- specialised conventions and seminars
- university departments
- doctoral thesis
- in-company research

Level 4 : This kind of information usually resides in a few gifted individuals, the so-called prophets. Not only are they difficult to find, but is often difficult to distinguish between the prophet and the charlatan.

It is impossible to guarantee a source for this information. Suffice to say that the curriculum - builder should maintain an openness for this kind of information and a readiness to assess it.

It is interesting to note in this regard that the information often comes from a source outside the profession - the most dramatic insight into organisational behaviour in the last two decades came from a biologist; Sigmund Freud was trained as a doctor; several scientific breakthroughs came from amateurs and hobbyists, etc.

4. HOW DO WE ALLOW THIS INFORMATION TO INFILTRATE OUR CURRICULA?

For this section I will draw heavily on our experience at the Institute of Personnel Management, where we recently rewrote our entire syllabus. I do so in the knowledge that much of what we did can be applied (albeit in an amended form) in every educational institution preparing professionals.

Level 1 : Set up systems whereby practitioners of the profession can contribute to the syllabus. At the IPM we introduced a steering committee consisting of professionals in the field, consultants and academics to help us develop our syllabi. We also included some distance education specialists, because this is our method of instruction. They were given a free hand to suggest topics for inclusion in our Diploma.

Once all these ideas were organised into a curriculum, it was circulated through our branch network to our

members, some 7000 practitioners, academics and existing students. We received valuable feedback that was incorporated into the Diploma.

Another source that we are currently tapping is students that have completed their studies. We canvass their opinion on the applicability of the qualification and the way it helped or hindered them in the execution of their duties.

Existing students (most of whom are already working in the personnel profession) are also a valuable source of information. Our student help-desk is continually monitoring their questions and this often highlights areas of weakness in our course material - areas where education and practice do not agree.

In order to keep the diploma up to date we have appointed practitioners as subject chairmen. Their main objective is to update the information in line with current practice. They also peruse textbooks to serve as core reference and additional material for inclusion.

The last major source for level 1 information is the assignments received from students. Because these assignments are of a practical nature, it is a barometer of how the knowledge is applied in the field. Creative assignments often act as the incentive to investigate the applicability of portions of a subject. Assignments are sometimes the only indication that the subject (or a portion thereof) is losing touch with current practice.

Level 2 : This information is very important for learning institutions - we are, after all, preparing students for the realities of tomorrow.

A major source of this kind of information is the IPM's own annual convention. Speakers from all parts of the

world and South Africa deliver papers. These papers are included, sometimes as appendices, in the subject notes after being screened by diploma staff and subject chairman.

Another important system is that of our External Examiners - we call them our Board of Examiners. They have a specific mandate; not only to examine whether examinations tested students, but also to examine course content. Because a profession always applies knowledge from a basket of pure sciences, we chose the Board on this basis. They are mostly academics representing the various scientific disciplines that feed our profession.

Keeping in touch with the clients or receivers of the service of your profession is also important. The IPM does so by encouraging non-professionals to join as members. This gives us an opportunity to keep track of changing customer needs and helps us to choose between alternatives that become available via the experimental/ research route. If your institution does not have a membership outside its student population, it might be worthwhile to investigate the formation of client groups (consumer councils if you will) to assist in this regard.

In the final instance, the educational institution must identify the change agents (or change masters) at work in the profession. Certain companies and individuals concistently display the ability to precipitate change - where they lead, others tend to follow. These sources must be identified and a close watch must be kept on their practices. What American companies did in the field of Industrial Relations and later in Social Responsibility programmes is rapidly becoming the norm in South Africa, for instance. Ways and means must be found to expose curriculum - builders to this source through in-company work and regular visits.

The last strategy is the encouragement to formally and informally make contact with other curriculum - builders, and to swop information about sources and knowledge. Too often competing institutions close their ranks with the result that the profession as a whole suffers. The IPM, for instance, swopped information about curricula with the technikons. In larger educational institutions there may also exist the problem of inter-departmental rivalry which must obviously be addressed.

Level 3 : Experimental and research institutions specialising in level 3 informaion are often not market orientated - research for research's sake often produces the most unexpected and best results. It is, therefore, up to the educational institutions to develop ties with these institutions. One of the best ways is to fund research being undertaken.

Letting researchers make use of the facilities you have is another alternative. The IPM regularly places its mailing list at the disposal of people doing relevant research.

A third alternative would be to create opportunities for curriculum-builders to travel - especially internationally. It is often difficult to justify this kind of expense, because the return on the investment often does not materialise within the current budget. The expense, however, is usually justified if the long term spin-offs are taken into consideration, not only in terms of subject content, but also in terms of educational technology. Contacts and friendships established in this way often continue to be fruitfull for many years.

Level 4 : The IPM has not found a guaranteed avenue to break into level 4 information. Suffice to say that some of the most startling innovations came from professionals in the field. Maybe the fact that we have a monthly journal that allows contributors to speculate unwisely at times, is a wise professional risk - some of the more daring speculations have paid dividends in terms of practical, workable principles uncovered. Our letters to the editor is often thought-provoking and certainly always entertaining!

5. CONCLUSION

In conclusion it would seem that one should make an inventory of the resources available both inside and outside the learning institution. It is then important to create avenues to tap these resources - this is often the most creative part of the exercise. Lastly there must be the determination (and sometimes the risk) of including the information in the learning material.

Perhaps the most important resolution, however, is never to lose sight of our end-users - the professionals and the receivers of their services - because this, finally, is the reality that is the basis for our existence.

2008

THE ROLE OF PRIVATE CORRESPONDENCE COLLEGES IN THE FIELD OF TERTIARY BUSINESS EDUCATION IN SOUTH AFRICA

Theuns Gerber

THE RAPID RESULTS COLLEGE

INTRODUCTION

There are four main routes those who wish to prepare themselves for a business career can follow in order to qualify:

1. Enrolling for an appropriate degree course through a university.
2. Studying through a technikon, either for a National Diploma or preparing for the examinations of one of the institutes dealt with later in this paper.
3. Preparing for an institute's examination or studying other courses by attending lectures at a private business college.
4. Studying for institute examinations through private correspondence colleges.

This paper will concentrate on the facilities available under heading 4 above. To cover this subject effectively, it is necessary to discuss not only the correspondence college movement, but also the institutes (sometimes known as qualifying associations) which conduct the actual examinations.

THE EXAMINING INSTITUTES

An examining institute can be described as an organisation which attempts to qualify individuals for practice in a particular profession. It sets entrance requirements in terms of age, education and training, examination success and experience.

The term "profession" has been defined as "a type of higher grade non-manual occupation with both subjectively and objectively recognised occupational status, possessing a well defined area of study or concern and providing a definite service, after advanced training and education." As most of the institutes examining business subjects in South Africa trace their origins to Britain, it is interesting to trace the development of the profesions and, thus, the institutes in that country.

Law was the first secular profession to be organised, the "Inns of Court" being established in the year 1400. Subsequent to this, other professions organised themselves but it was not until January 1818 that we

2/ saw the formation

saw the formation of the first professional institute. This was the Institution of Civil Engineers although one should note that this Institution only introduced a qualifying examination in 1897: at first, qualification was by taking up an apprenticeship with a practising member, who later vouched for the pupil after a suitable period of employment.

From mid-century the number of institutes multiplied, especially from the 1880's. The movement spread to other types of engineers, surveyors, chemists, librarians, accountants, auctioneers and company secretaries.

The following table gives the name, date established and date of the first examination of those institutes which have direct or indirect links with the South African institutes discussed later in this paper.

INSTITUTE	FOUNDED IN	FIRST EXAMINATION
The Institute of Bankers	1879	1880
Chartered Institute of Secretaries	1891	1897
Institute of Marketing and Sales Management	1911	1928
Institute of Cost and Works Accountants	1919	1920
The Building Societies Institute	1934	1936
Institute of Credit Management	1939	1949

The British Institute of Management was incorporated in 1947 but conducted examinations from the year 1927 as The Institute of Industrial Administration. The B.I.M. ceased conducting examinations in management subjects as from October 1966.

We can summarise the functions of institutes by saying that they aim to qualify individuals for practice in a particular profession and that:

a) Profession involves skill based on a theoretical knowledge.
b) The skill requires training and education.
c) The professional must demonstrate competence at passing an examination.
d) Integrity is maintained by adherence to a code of conduct laid down by the Institute concerned.

THE ESTABLISHMENT OF CORRESPONDENCE COLLEGES

Initially, the lack of outside education facilities forced institutes to use their own resources.

3/ The situation gradually

The situation gradually improved for institutes connected with "commerce". Some common subjects began to emerge — bookkeeping, accountancy, aspects of law, commercial practice and so on.

The expansion of commercial and technical colleges, and the lower cost of printing (thus increasing the production of textbooks) enabled institutes to lay greater emphasis on examinations and to stress the need for a theoretical background. Students became more organised and took advantage of the benefits arising from student membership of the institutes — they received institute journals, they could use the library, attend lectures and conferences and obtain advice from qualified members.

Correspondence courses appeared as a response to the growth in the institutes' examinations and as a means of preparation for the external degrees of London University. It would seem that postal tuition commenced in January 1840 when Isaac Pitman used the new "penny post" to conduct shorthand courses by post card! In Berlin a French teacher, Charles Toussaint, and a German writer, Gustave Langenschitt, established a school for the tutoring of languages by correspondence.

In 1880 a Scottish civil servant, C.E. Skerry offered postal teaching for civil service examinations. Seven years later Clough's College started a correspondence course for teachers. The University Correspondence College was founded in 1887, Chambers in 1885 and Wolsey Hall in 1894.

Correspondence Colleges came to play a significant role in the preparation of students for the institutes' examinations. It is estimated that, in Britain today, from 50 to 90% of candidates use correspondence courses to study for the examinations of institutes connected with commercial and business courses. Advocates of correspondence courses claim many advantages for the method: independent tuition at the student's own pace; no regular attendance time or unpleasant journeys to classes; the ability to earn and learn at the same time, and so on.

To round off our discussion on the establishment of the correspondence college movement, it will be of interest to see what happened in some other countries, apart from Britain and Germany.

A Society to encourage Home Study was established in the United States of America in 1873. This Society was based on the English University Extension movement.

In Pensylvania, Thomas Gay Foster, the proprietor and editor of a newspaper, was so concerned about the numerous mine accidents that occurred that he published a daily column in his newspapers dealing with mining problems and the prevention of mine accidents. The new feature aroused so much interest that courses in coal mining, mine surveying and mine machinery were prepared under his direction.

4/ These courses were

These courses were highly successful and led to enquiries for information on other subjects of interest to engineers, draughtsmen etc. This resulted in the establishment of the International Correspondence Schools of Scranton, Pensylvania.

Correspondence tuition is sometimes regarded as being suitable only for large, sparsely populated countries where attendance at classes presents a travel problem. This theory is disproved by the situation as it exists in Northern European countries, like the Netherlands and Sweden. At one stage (and for all I know this might still apply) Sweden was the country with the largest percentage of correspondence students in the world in relation to total population.

In Soviet Russia, part-time evening and correspondence study is the most important form of higher education in the country. At one stage more than 40% of the total enrolment at institutions for higher education were in special correspondence programmes. Correspondence education was introduced in Russia towards the end of the last century when societies such as the "Society for the Promotion of Technical Knowledge" and "People's Universities" were established.

THE POSITION IN SOUTH AFRICA

In South Africa the university degree has traditionally been the sought after qualification for those aiming for a career in the public service and in other official or semi-official organisations, although recently the institutes have achieved something of a breakthrough in that both The Institute of Chartered Secretaries and Administrators and The Institute of Administration and Commerce have been advised that their qualifications will be accepted for promotion in the public service.

It is in industry and commerce where the institutes play a leading role in the sphere of tertiary business education and, as a very large percentage of those students writing the institutes' examinations study through correspondence, it follows that the influence of correspondence colleges is of considerable importance.

I have isolated ten institutes which I regard as the largest and most significant in the field under discussion. Of these two (The Institute of Personnel Management and The Insurance Institute of South Africa) have made their own arrangements for correspondence training and fall outside the scope of this paper. I will discuss, firstly, the remaining eight business related institutes and then go on to a discussion of the private correspondence colleges providing the tuition for the examinations conducted by these Institutes.

5/ THE INSTITUTE OF BANKERS

THE INSTITUTE OF BANKERS IN SOUTH AFRICA

The largest of the institutes dealt with in this paper is The Institute of Bankers. The first steps towards the formation of this Institute were taken in 1898 when some 40 members of the Standard Bank, Cape Town, motivated by the desire to have a body which would care for the technical instruction and education of banking staff, formed The Standard Bank Institute. In 1900, however, one Harold Quigley sent out a circular to his fellow members in which he made a strong case for transforming The Standard Bank Institute into something more serious and spelt out a blueprint for the formation of a South African Banking Institute. It was suggested that the Institute be expanded to include other local banks. The result was that on 27 January 1904, The Institute of Bankers in South Africa came into existence. The original headquarters were in Cape Town. During 1972 a decision was taken to leave the Cape and set up headquarters in Johannesburg following the earlier trek northwards of the main commercial banks.

The extent to which the Institute is supported by the major banks in South Africa can be gauged by the fact that membership grew from an original 717 founder members to over 19,000 at the end of 1986.

The major feature of institute examinations in the tertiary business field is the efforts made to update the structure and syllabuses of examinations to take into account the needs of the market place. The Institute of Bankers has been no exception and a recent change in examination format allows students to specialise in one of five diplomas — Commercial Banking, General Banking, International Banking, Trustee work and Consumer Banking.

THE BUILDING SOCIETIES INSTITUTE OF SOUTHERN AFRICA

In terms of a memorandum submitted to it, the executive committee of The Association of Building Societies of South Africa approved, on 8 May 1919, the inauguration of a scheme for providing specialised educational facilities for officials in the Building Society movement in South Africa.

Following upon assurances of support fro the majority of member societies of the Association, a complete, detailed syllabus was determined and regulations made for the conduct of examinations. The project had been brought to the point of initiation when the outbreak of war in September 1939 compelled its suspension. This scheme was resuscitated in September 1946 and a draft constitution was accepted by the Council of the Association on 18 November 1946.

6/ The original examination

The original examination system comprised a three-course examination of five papers in specialised building society matters which could only be taken by the candidate if he or she had previously been successful in the final examination of one of a panel of approved bodies outside the building society movement. Subsequently, as from 1954, the Institute conducted its own full scale examination. Here again, the structure of the course is regularly updated and it now covers all aspects of building society work, including a specialised Valuers' Diploma.

THE INSTITUTE OF CHARTERED SECRETARIES AND ADMINISTRATORS

It is interesting to note that the first branch of the Institute (formerly known as the Chartered Institute of Secretaries) established outside the United Kingdom was the South African branch which was formed in 1909 — only 18 years after the Institute's foundation. Today there are divisions in Australia, Canada and New Zealand and associations and branches in other countries.

Although local autonomy was progressively achieved, until its culmination in the Institute's South African incorporation in February 1972, the same examination standard and the same criteria for membership have been maintained as prevail elsewhere in the world. As clear evidence of this, success in the Southern African Institute examinations is recognised world-wide and membership of the Institute records simultaneous membership of the international body.

Membership of the C.I.S. is not confined to any specific area of management. The qualification is widely sought after in many fields of management and the wide range of subjects included in the examination course bears testimony to the diversified interests of candidates. A recent survey showed that the main activity of members and students is administration, financial accounting and management (74%), with marketing, personnel management and public relations being other important areas of activity.

There are more than 45,000 qualified Chartered Secretaries throughout the world and more than 4,000 of them are members of the Southern African Institute. About 4,500 of the registered students are here in Southern Africa.

THE CHARTERED INSTITUTE OF MANAGEMENT ACCOUNTANTS

This Institute, (originally known as the Institute of Cost and Works Accountants and, subsequently, as the Institute of Cost and Management Accountants) has its headquarters in London. In the late 1940's the few South African members were asked by London to stimulate interest in the Institute and to assist with the furtherance of its growth in South Africa. In 1953 it was decided to ask London to form a South African council. This was agreed and such a council was duly formed in 1955.

7/ The main objective

The main objective of the Institute is to prepare those who wish to qualify in the field of management accountancy and its syllabuses are geared to teach the following skills:

a) Long term planning and development of strategies needed to meet objectives.
b) Short term operational training and control of projects and resources by means of budgets.
c) Recording and analysing transactions and activities, and producing both management and financial accounts.
d) Providing and interpreting financial and economic information.
e) Internal auditing.
f) Obtaining and controlling funds.

The Institute's education and training pattern does, however, form a basis from which some members develop careers in spheres other than management accountancy, including general management, computerised information systems, consultancy and teaching.

A feature of the C.M.A. qualification in South Africa has been the tendency for it to become a "second qualification". Many candidates obtain a B Comm degree, or qualify as Chartered Accountants or Chartered Secretaries and then go on to write C.M.A. The letters "ACMA" or "FCMA" added to a "first" qualification certainly enhances the holder's career prospects considerably.

THE INSTITUTE OF ADMINISTRATION AND COMMERCE

The objectives of the founders of the Institute were mainly to establish a South African Institute with a national character which would grant to its members qualifications in the various branches of administration and commerce and which would ultimately obtain recognition as a guarantee for thorough theoretical knowledge and practical experience. The approval of the then Union Department of Education was obtained in 1927 for the establishment of such an Institute. The I.A.C. today has 12,900 members and students.

In the South African context, the I.A.C. is unique in that although there is a common certificate stage consisting of six subjects, students then have the opportunity of writing a diploma examination in the field of their choice. These diplomas cover accountancy, company secretaries, management, local government, executorship, trusteeship, executive secretaries, cost and management accountancy, co-operative affairs, life underwriting, marketing management, industrial relations, life assurance, personnel management, public relations and business studies.

8/ THE INSTITUTE OF CREDIT MANAGEMENT

THE INSTITUTE OF CREDIT MANAGEMENT

In April 1953 a group of credit managers met in Johannesburg. They foresaw the need for a professional body to educate those employed in the administration of credit. Out of their deliberations was born The Society of Credit Managers of South Africa and four months later they produced the first constitution of the Society. In May 1967 the present name, The Institute of Credit Management in Southern Africa was adopted.

The Institute is comparable with similar professional bodies operating successfully in other countries and has regular contacts with like bodies in Britain, Canada, Australia and the United States.

THE SOUTH AFRICAN INSTITUTE OF MANAGEMENT

This Institute was founded in 1960 as a South African offshoot of The British Institute of Management.

It has developed into:

a) A national clearing house for Management Information.
b) A source of advice and help on management to members.
c) A forum for managers (conferences, workshops and meetings).
d) A vehicle for students to gain single subject certificates as well as a fully fledged advanced diploma.

The development of the single subject certificate is relatively recent. The Institute acknowledges that there are certain categories of students who wish to gain a specialised knowledge in certain fields without studying for the three or four years it takes to complete the Advanced Diploma. These students may choose a subject, or a group of subjects, from those offered by the Institute and write examinations in these subjects only.

THE INSTITUTE OF MARKETING MANAGEMENT

The South African Sales Managers Association was formed in 1949. In 1961 the name was changed to The Institute of Marketing Management.

9/ The I.M.M. is an

The I.M.M. is an association of people actively engaged in the business of marketing. It represents the marketing profession — in all disciplines and at all levels of management in South Africa.

It enjoys international recognition and is affiliated to similar institutes overseas.

In addition to shorter post-experience courses handled through its educational arm "The College of Marketing", the I.M.M. offers a three year diploma in Marketing Management and in addition has specialised certificates in salesmanship, sales management and retail marketing. The I.M.M.'s South African membership stands at 4,500 of which 2,000 are students.

THE INSTITUTES — A SUMMARY

It is widely recognised in industry and commerce that the work done by the qualifying institutes discussed above plays a vitally important role in the field of tertiary business education in South Africa. It is, perhaps, opportune at this stage to highlight two areas where the qualifications obtained through an examining institute differ from a university degree or a national diploma.

1) The information given in this paper on the development of the institutes overseas, and the growth of the institutes in this country, makes it clear that the South African institutes have, for the most part, forged close links with similar institutes in the United Kingdom and with the branches or divisions of those institutes in other countries. In today's climate, these links are of obvious benefit not only to South African business in general, but to the individual members in particular.

2) An Institute does not exist merely to examine candidates and issue certificates and diplomas. An equally important function is the disciplinary powers it exercises over its members and students. No qualified student may use designatory initials until he or she has joined the institute as a member and the right to use the initials rests with the institute.

The importance of the disciplinary powers mentioned above can be illustrated by a recent development. The right to act as an Accounting Officer of a Close Corporation is granted only to members of certain specified examining bodies where the membership criteria (including disciplinary codes) are in operation. Two of the institutes described above (the C.I.S. and the I.A.C.) are amongst the bodies recognised for this purpose.

THE CORRESPONDENCE COLLEGE MOVEMENT IN SOUTH AFRICA

Nearly fifty private correspondence colleges are registered with the statutory body — The Correspondence College Council. Many of these are small, confining their activities to specialised fields. However, the five larger colleges provide tuition for examinations ranging from "school" certificates through to qualifications examined by the institutes described above.

Set out below are brief details of the five colleges referred to:

DAMELIN INSTITUTE OF PROFESSIONAL STUDIES

The correspondence division of the Damelin organisation was started by Mr Johan Brummer (the present Principal) during 1955 — its "parent" the Damelin High School, was established in 1944. In its early years the Damelin Institute of Professional studies concentrated on correspondence courses in the field of high school education but subsequently, branched out into professional institute courses. Its headquarters are in Johannesburg.

INTERNATIONAL CORRESPONDENCE SCHOOLS

Officially it would appear that ICS was established in South Africa during 1910 although John Cheminais, a senior member of the College's staff, has seen a copy of a trading licence dated 1906! The College is a branch of an American organisation and in addition to institute courses, it offers training for high school examinations as well as technical and hobby courses.

LYCEUM CORRESPONDENCE COLLEGE

The Lyceum Correspondence College was established in Johannesburg in 1930 by Messrs Sadi and Aab. It subsequently took over Union College established in 1917 and offers high school correspondence courses as well as correspondence courses leading up to institute examinations.

11/ THE RAPID RESULTS COLLEGE

THE RAPID RESULTS COLLEGE

The Rapid Results College was founded by Mr David Young in 1928. Its original function was to provide tuition for the Institute of Bankers examinations, but subsequently the syllabuses of other institutes was covered as well as high school examinations. For many years it offered tuition for degree examinations of the University of South Africa and the Attorneys Admission and Public Service Law examinations of the Joint Committee for Professional Examinations.

An unusual aspect of the RRC is the fact that after establishing the College in Durban, South Africa, the founder took the same techniques and methods overseas and built up in the United Kingdom a College of the same name, now one of the best-known in Great Britain and the Commonwealth.

SUCCESS COLLEGE

Success Correspondence College was started by a Mr Botma in 1940. Its present principal, Mr. Bert Visser, took over in 1946. This College offers high school courses as well as courses leading to the Institute examinations.

The major colleges have made strenuous efforts to ensure a high standard of service to their students, and the formation of two organisations played an important role in these efforts:

1) **THE SOUTH AFRICAN ASSOCIATION OF CORRESPONDENCE COLLEGES**

In order to "promote sound methods and to consider, originate and bring about improvements in the conduct and administration of training by correspondence generally and adult education by such means in particular" a meeting of representatives of private correspondence colleges decided to establish a society to provide effective control of correspondence tuition. This led to the formation of The South African Association of Correspondence Colleges (later to become the Association of Correspondence Colleges of South Africa) on 31 August 1949. Although membership of the Association is voluntary, it has undoubtedly contributed much to the standing of correspondence training not only by member colleges, but also by non-members who were forced to improve their standard of tuition in order to compete with members of the Association.

12/ 2) THE CORRESPONDENCE

2) THE CORRESPONDENCE COLLEGES ACT

Because membership of the South African Association of Correspondence Colleges was voluntary, it was not possible for control to be exercised over *all* colleges. For this reason the council of the Association gave consideration to the introduction of a private bill in Parliament to deal with the registration and control of private correspondence colleges. A draft bill was, in fact, approved in principle during 1956 but it was not until 1965 that the Correspondence Colleges Act was passed by Parliament and became law. The Act provided for the registration of all private correspondence colleges, for the establishement of a correspondence college council and for a fidelity guarantee fund to be introduced.

The Correspondence College Council consists of six members, two of whom are appointed by the Government and four by the registered correspondence colleges themselves. The Act concerns itself with such matters as the qualifications of persons compiling courses, minimum standards of service, etc. A student with a complaint is required to take the matter up with his college, but if the complaint is not settled to his satisfaction, he is entitled to approach the Registrar of The Correspondence College Council who is bound to investigate the matter on his behalf.

During 1984 the Council asked Mr. Conrad Wiedhaup, retired president of the European Home Study Council (a highly respected organisation of European Correspondence Colleges) to come out to South Africa to inspect the major colleges, to comment on the standard of service etc., and to make recommendations for improvement.

The investigation was an extremely thorough one and Mr. Wiedhaup expressed himself well satisfied with what he had seen.

SOME FINAL THOUGHTS

I hope that my attempt in this paper to trace the development and growth of examining institutes and correspondence colleges, both overseas and in South Africa, has shown the organisations to be built on solid foundations and emminently suitable to play leading roles in the field of tertiary business education in this country. Those in control are fully aware of the educational needs of business and they have shown time and again that they are prepared to adapt to meet these needs. Because they are "private" the colleges and the institutes can move swiftly to implement changes they deem necessary.

13/ The close co-operation

The close co-operation between the colleges and the institutes is a feature of the situation in South Africa. Both through the voluntary body to which most of the institutes belong (SAAMI - The South African Association of Management Institutes) and individually, institutes invariably discuss changes with the colleges and seek their views. The colleges for their part are fully aware of the role modern technology (assisted computer education, video tapes, etc.) will play in the home study course of the future and detailed investigations as to the best means of introducing these methods are underway. The "send us five dollars and your muscles will follow in the next post" concept has certainly come a long way since Isaac Pitman sent out his post cards so many years ago.

In conclusion, I should like to express the one real regret I have after twenty eight years in the correspondence college movement. I refer to the lack of any real communication between the formal education movement in this country (schools, technical colleges, technikons and universities) and the non-formal sector — corespondence colleges, business colleges and examining institutes. How often in official statements on education have you seen reference to the private sector? It is freely acknowledged that South Africa is desperately short of trained people. Can we truly say that we are using all available resources to their full capacity?

2009

THE NECESSITY FOR DISTANCE TEACHING IN THE IN-SERVICE EDUCATION OF TEACHERS IN SOUTHERN AFRICA

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1. Introduction

Teachers world-wide undergo an initial training which gives them admission to the profession and the rudiments of classroom practice. This is not enough to ensure personal and professional growth of the teacher in a career which may last as long as 45 years. It is thus essential to offer teachers further training and education in order to ensure that they keep pace with changes and trends and at the same time are continually challenged to develop as professional people. In-service training is thus not a luxury but crucial in any education system.

2. Definition of terms

2.1 Cane (1969, X) defines in-service training as:

"In-service training is taken to include all those courses and activities In which a serving teacher may participate for the purpose of extending his professional knowledge, interest or skill. Preparation for a degree, diploma or other qualification subsequent to initial training is included within this definition."

This definition makes allowances for any activity that the serving teacher may undertake that is related to teaching. The scope is thus very wide and ranges from the academic to teaching skills while at the same time being predominantly career orientated. Many authorities, including Bot (1986), Hopkins (1986) and The Organisation for Economic co-operation and development (1978), now prefer to use the term In-service education and training (INSET). Instead of only using the word training the word education is included to allow for a broader concept of personal growth on the part of the teacher. Training may be considered as too skill-orientated whereas education could one-sidedly lay greater emphasis on the academic aspects. In this paper the term INSET will be used

so as to include all aspects of in-service activities.

2.2 Distance education

For the purpose of this paper distance education will be taken to mean any form of education that is undertaken away from the campus of the organisation offering the education. This includes use of the written word, use of media as well as visits by lectures and students on organised or ad hoc bases. Primarily distance education relies more heavily on the use of the written (printed) word than on any other of the methods mentioned above. The use of other media must not be discounted, especially in the field of teaching where skills may be needed to be practiced using these other media.

3. The need for in-service training

Every country in the world has a need to provide some form of in-service training for teachers. It is obvious that new knowledge and methods must be conveyed to teachers working in the classroom. Countries differ in their needs and in a paper of this nature the focus will be on the needs in South Africa which will not be the same as say England where the teaching profession is almost entirely a degreed profession with a long-standing Western culture entrenched over the whole country. South Africa faces a different problem with approximately 42000 black teachers in 1985 in the Department of Education and Training holding qualifications less than matriculation plus three years training (M+3) and approximately 30000 with academic qualifications less than Standard 10. (le Roux 1986, 3). There is thus an urgency for up-grading qualifications, both academic and professional, besides other forms of in-service training. In Southern Africa in 1985 as a whole there were approximately 22000 teachers without any professional qualification and nearly 12000 of these had an academic qualification lower than Standard 8 (Carstens, du Plessis, du Plessis, 1985, 16) enough evidence to illustrate how vast a problem our country faces

if we wish to improve the standard of education as a whole, as quality education in schools depends on quality teaching and that depends largely on teacher education and training.

4. Types of Inset

The needs of teachers in the education system may be classified in various ways. The first distinction that must be made is between UNqualified teachers and UNDERqualified teachers. The unqualified teachers need, primarily, a qualification and this must be more professionally orientated. Underqualified teachers will have some form of professional qualification but will need a more academically orientated Inset programme. In both cases however the Inset will be formalised and must lead to an officially recognised qualification or certification.
Hopkins (1986) distinguishes between course based (not in the school), school based (Inset in the school staff) and school focussed training and goes on to define school focused as:
"School focused training is all the strategies employed by trainers and teachers in partnership to direct training programmes in such a way as to meet the identified needs of the school, and to raise the standards of teaching and learning in the classroom." (Hopkins 1986, 5).

Clearly school focused training will be more professionally orientated and may not necessarily lead to a formal qualification and it may well be course based as well as school based. For both un- and underqualified teachers more than a school focused Inset is needed but school focused must not be entirely neglected. Both categories of teachers will have a greater need for course based than school based training.

Morant (1981, 4) identifies four objectives for Inset which should enable teachers:

"(a) to evaluate their own work and attitudes in conjunction with

their professional colleagues in other parts of the education service;

(b) to develop their professional competence, confidence and relevant knowledge;

(c) to develop criteria which would help them to assess their own teaching roles in relation to a changing society for which the schools must equip their pupils; and

(d) to advance their careers."

It is clear that Morant sees the need for the academic and professional as well as course based and school based training but in (d) the emphasis is on formal training with recognition by employing authorities of the achievement. There is, however, a need to accept as valid all the objectives Morant has identified but it is not possible to be too prescriptive as to which aspect is the essential ingredient in a total Inset programme.

Bot (1986, 7-8) identified 5 categories of which 3 are informal (non-qualification) and 2 are formal (for a qualification). In the informal she includes:

Curriculum-related Inset
Inset for new roles
Other Inset for Un(der)qualified and Qualified Teachers.
In the formal she includes:

Academic upgrading
Professional upgrading.

These categories are all course based and not school based but of the 5 four are school focussed and certainly all of them are aimed at achieving objectives such as those identified by Morant. The last two, that is, academic upgrading and professional upgrading are offered to help teachers "advance their careers". Bot supports this by stating:

"Inset of this kind is from the teachers' viewpoint of course very important, especially since the government has introduced parity

with regard to salaries and laid down the same requirements for professional recognition. As a consequence, many teachers will have to meet these requirements if they wish to advance professionally. In addition, this type of Inset brings direct benefits in the form of permanent posts, promotion or salary increase, and opens further avenues for upgrading and training". (Bot 1986, 8).

5. Geographical distribution of the population in South Africa.

South Africa is a land with a relatively large area compared with Western European countries where Inset programmes are geographically more accessible. The population distribution in Southern Africa is characterised in general by high density concentrations in and around, metropolitan complexes and sparse distribution in the more remote areas. The Pretoria-Witwatersrand-Vereeniging complex for example houses more than 40% of the white population of the country while the black population in the same area is increasing very rapidly. Many teachers may thus be within easy reach of an Inset programme but many others are not. Certainly in remote areas such as the Northern Transvaal, the North West Cape, and Northern Natal there is very little chance of teachers attending inset programmes without having to leave their classrooms and homes for lengthy periods.

In a survey by Kilpert (1984) it was shown that in the History I course at Unisa 47,5% of the students residing in the Republic of South Africa lived in one of the major centres. He also showed that 16,0% lived in smaller centres or rural areas and that 19,0% lived in one of the homelands or TBVC states. Thus in this survey 35% of the History I students at Unisa were not within a reasonable distance for attendance at a university. Similar projections may reveal that there are many thousands of teachers in need of Inset but out of reach of attendance courses without considerable sacrifices having to be made on the part of the teacher.

6. Courses offered in South Africa

The Minister of National Education said on the SABC television

programme "Network" on Sunday 4 January 1987 that 50% of all teachers in South Africa are involved in some form of in-service training. Bot (1986) has presented a very thorough survey of Inset courses offered in South Africa and she uses as a basic classification those courses offered by non-departmental agencies (private institutions and businesses) and those offered due to departmental involvement. In all 85 Inset programmes were being presented when the survey was carried out and of these 54 were non-departmental and 31 departmental. The majority of the non-departmental programmes did not lead to a formal qualification and were professionally orientated. Only 6 of the non-departmental programmes led to an upgrading of qualifications and 5 of these were academically orientated. None of the non-departmental programmes offered are presented by means of distance teaching but in 8 cases a limited use is made of a primitive form of distance teaching such as - "hand outs are read at home", "newsletters are sent out", "written reports are monitored","follow up occurs only informally through correspondence".

Departments of edcuation are involved in 31 Inset programmes and of these 11 are professionally orientated but do not lead to a formal qualification. According to Bot (1986, 131) 20 of the programmes lead to academic or professional upgrading and of these 12 involve some form of distance education. On reading the report, however, the respondents to Bot's questionnaire appear to give very vague and unclear responses to the questions related to methods used and the exact nature of type of course, that is, attendance or distance teaching, or both. From the reported responses it appears that only 3 of the 31 programmes are purely distance teaching and all 3 are professionally orientated. Of the others there is one professionally orientated course that makes a limited use of distance teaching by using self study tasks (Bot 1986, 96) and 4 that are academically orientated which make use of distance teaching combined with attendance teaching.

It is very clear that relatively little use is made of distance teaching in Inset programmes offered in South Africa but the impact and value of programmes offered by Vista and Unisa must not be under estimated as they reach out to every corner of the country and to large numbers of students. It is interesting to note that Bot did not include Unisa in the survey, probably because Unisa does not specifically aim at Inset for teachers.

7. The role of distance education in Inset.

In the Report of the Work Committee: Recruitment and training of teachers (1981) there is a section (5.6 pp 114-121) which deals with continuing teacher training (a term used that is equivalent to Inset as defined in this paper). The report does not, however, refer to distance education and is far more orientated to the role of the various education departments in Inset. The de Lange Report (1981, 183) also makes recommendations on the continuing training of teachers but concentrates on facilities that are "strategically placed" and no recommendation with regard to distance training is made. An Education Working Party was appointed by the government to advise the Ministers involved in education in the cabinet, with regard to the Human Sciences Research Council reports submitted in 1981. The Education Working Party submitted a report and as a result the Minister of National Education presented - White Paper on the Provision of Education in the Republic of South Africa (1983). In this White Paper (1983, 42) reference is made to the Education Working Party report which states that "facilities for continuing training should be carefully planned so as to be easily accessible and also accessible through distance teaching". From what has been quoted in this paragraph it can be deduced that to a large extent distance education has been overlooked as a means of Inset for teachers in South Africa.

Dove (1986, 216-217) discusses Inset programmes in developing countries and comes to the conclusion that economics plays a large part in forcing governments to limit Inset to a relatively small scale with a probable low impact. One exception to the rule is Kenya which has developed a Correspondence Course Unit

of which Dove (1986,217) says:

"Kenya's distance teacher upgrading strategy provides one example of a thorough-going attempt to find alternative means of preparing serving teachers to meet the demands of an expanding school system".

Dove (1986, 218) puts forward six reasons why the distance training in Kenya was more successful than other Inset programmes:

1. Such programmes are popular with teachers.
2. Upgrading especially academic is undertaken without involving College staff.
3. May be cheaper than face to face programmes.
4. Releases college trainers for other tasks.
5. Teachers are kept teaching in the classrooms.
6. If different media are used then other agencies and institutions may become involved.

The above six points may be regarded as some of the important reasons why distance education may hold more answers to Inset than face to face teaching. Certainly one of the most important, in a country where there is an under-supply of teachers, is the fact that teachers may follow the Inset programme while continuing to teach in the classroom.

Academic upgrading may well be more easily undertaken by distance teaching and the statistics of enrolments of Unisa students would support this.

"Unisa plays a crucial role in education in South Africa with a strong emphasis on the acceptance of social responsibility through community service. More than 25% of the students are teachers, making Unisa the largest institute in South Africa for the academic training of teachers. More specifically, about 8% of the students are black teachers - implying that one out of every three

matriculated Black teachers in South Africa is studying through Unisa". (Unisa Alumnus, Nov 1986 Vol.8 p 5)

Vista University also uses distance teaching for upgrading of teachers who have a senior certificate (Std 10) and a teacher's diploma that places them on Category A or B. The programmes are designed to cover both academic content and method and are more school focused than the Unisa courses which are not designed for Inset of teachers. Vista numbers are growing annually and run into figures over 5000 (distance teaching campus only).

According to a document produced by Syncom (1986, 37) by the year 2000 at least 17 giant new universities will be needed to accommodate the exploding tertiary level population. This may not be economically possible but certainly one solution is to expand distance teaching. If distance teaching institutions are expanded, or new ones created, provision could be made for Inset of teachers.

8. Recommendations

1. There is a definite need for an expansion of Inset programmes that make use of distance teaching.
2. Distance teaching of a primitive nature needs to be refined.
3. Established distance teaching institutions need to be involved (even if by giving advice only) in developing new Inset programmes that make use of distance teaching.
4. Distance teaching programmes with a professional focus need to be more widely devised and implemented.

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THE "DISTANCE" IMPLICATIONS OF COOPERATIVE EDUCATION AT RESIDENTIAL UNIVERSITIES AS STRATEGY TO ENSURE EFFECTIVE EDUCATION FOR THE PROFESSIONS

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1. INTRODUCTION

In a recent paper (Havenga, 1987) I argued that curricula to prepare students at universities for various professions that are developed in the traditional way do not ensure the effective preparation of such students. In effect, in the words of Levy (1980:1), I referred to pharmaceutical education as an example of professional education that prepares students for yesterday's practice, not for today's and most certainly not for tomorrow's practice. The paper highlighted the necessity for an alternative approach to curriculum development for professional degrees and explored one such an alternative, namely competency-based education. The definition of competency that was adopted for the purposes of that paper was that it comprises the knowledge, skills, values and attitudes needed to carry out properly an activity important to success in one's professional life (Havenga, 1987:2).

In examining the implications of a competency-based approach to curriculum development I concluded, inter alia, that it warrants the application of alternative teaching-learning strategies (1987:8). One such strategy was expounded, namely cooperative education. By cooperative education I understand a strategy whereby the formal academic preparation of a student and his practical preparation for a profession is integrated by enabling the student to alternate formal academic education and work in his profession.

In this paper, as in the previous one, I will again concentrate on pharmacy education as an example of the universities preparation of a student for a profession. At present, in this country, the professional preparation of a pharmacist consists of a four year baccalaureate programme followed by 12 months tutelage with a registered and approved pharmacist. Although the pupil and tutor enters into a contract the prescriptions by die Pharmacy Board regarding the practical professional training that the pupil must undergo is too vague, and to my mind embarrassing to the particular board, to be effective. The university as provider of the academic component of the pharmacist's preparation has no control over or accountability for the pharmacist's practical professional training. It is the dichotomous nature of independent academic schooling and independent practical professional training that needs to be eradicated, amongst others, before the professional preparation of students can be said to be effective. Although I am not aware of similar studies conducted in our country a survey of 35 studies in the United States of America lead Samson, Grauce, Weinstein & Walberg (1984:318) to conclude that the academic performance of a student is nearly useless as a predictor of occupational effectiveness. While the Pharmacy Board is at present busy with an indepth investigation into the training of pharmacists I sincerely hope that they will also address this problem.

Traditionally cooperative education implies a tripartite relationship, but where a professional board such as the Pharmacy Board is involved the relationship becomes quadripartite, namely between the university, the professional board, the prospective employer who will provide the practical professional training and the student. The advantages of cooperative education for the different parties are well known and I will not elaborate on them. What needs to be pointed out however is that the university in a cooperative education programme receives joint responsibility for the professional practical training of the student and evaluation thereof, unlike the situation at present. This joint responsibility of the university has certain implications for residential universities that need to be examined. The residential university will now be jointly accountable, and should to my mind be fully responsible for the learning expe-

riences and evaluation of the student that is physically removed from it. This highlights the problem statement of this paper:

What are the "distance" implications of cooperative education for residential universities and how can they be discounted in the development of cooperative education programmes?

2. COOPERATIVE EDUCATION

2.1 The essentials of cooperative education

In order to illuminate the problem it is necessary to set out the essentials of cooperative education. Although the concept of cooperative education has received wide attention in the literature (for example, refer to Wilson & Lyons, 1961; Lucas, 1975; Rankin, 1974 and Wilson 1978) I will confine myself to an adaptation of the exposition of Meiring and Jacobs (1984:11-14) for the purpose of this paragraph of the paper.

- Co-operative education combines formal academic education with periodic intervals of plannes supervised practical professional experience away from the university.

- The student is usually taken into paid employment for the duration of the practical professional training.

- Each work situation for practical professional training is developed and/or approved by the university, in accordance with the minimum requirements of the responsible professional board, as a suitable learning experience.

- The student must be engaged in meaningful productive work based on his/her theoretical and practical background.

- The student's progress is monitored by the university.

- The student's performance in the practical professional situation is evaluated by the employer and the university with possible control by the professional board.

- The total cooperative practical professional experience of the student should not be less than 30% of the time spent in academic study.

- Practical professional experience should be considered a regular part of the degree programme in the sense that no degree should be awarded without the completion of the minimum prescribed cooperative education experience.

2.2 Types of cooperative education

Although there are several distinct operating modes for cooperative education the two prevalent modes are the alternating mode and the parallel mode (Dawson, 1977). Irrespective of whichever mode is chosen it should be borne in mind that cooperative experience should neither preceed the first academic semester of the student nor should it take place after graduation.

2.2.1 The alternating mode

In this mode the student alternates periods of full-time study with periods of full-time work, normally of equal duration. The alternating mode has the advantage that two groups of students of the same academic year can be accommodated at the same time. While one group is undergoing practical professional training the other group can be accommodated at the university for formal academic work. It has the added advantage that students in this mode can consentrate fully on either academic or practical professional work.

2.2.2 The parallel mode

In this mode the student attends classes full-time during one part of the day while working during the other part of the day. A variation of this mode could possibly be where the student attends the university full-time for some part of an academic week whilst being busy with practical professional training for the remainder of the week. Although there are specific advantages attached to this mode of cooperative education, it is only possible if the university and the prospective employer are within commuting distance of each other. This places a restriction on our university as far as this mode is concerend. Our university is a medium sized (approximately 9 000 under- and post-graduate students) rural university with an average of 550 pharmacy students across the 4-year programme at any given time. It is virtually impossible to find employment for 550 pharmacy students in a small rural town or within commuting distance thereof. Whichever permutation of student groupings are used it stays an impossibility. Our department of Nursing Science on the other hand is in a more favourable position to implement this mode due to much smaller student numbers as well as the availability of two training hospitals within commuting distance. At present their students, especially the 3rd and 4th year students, are involved in a teaching-learning programme that bears some resemblance to the parallel mode. Another disadvantage of the parallel mode is that students find it difficult to adapt to conflict between work and study with a resultant degeneration of study, employment and personal life.

3. THE IMPLICATIONS OF COOPERATIVE EDUCATION

3.2 Curriculum development for cooperative education

3.1.1 Fundamental considerations

There are always fundamental considerations underlying one's approach to curriculum development. In a recent study at our university Van der Walt (1987) came to the conclusion that even our fist year students are more adult than adolescent. Even more so one can argue that the students in more senior years of study are indeed endowed with a greater

degree of adulthood than what they are credited for. With this in mind I strongly advocate an adult education (andragogical) approach to curriculum development. The concept of adult education has been receiving wide attention in the literature for a number of years (for example Knowles, 1980; The Nottingham Andragogy Group, 1983; Kowalski, 1984; Birkey, 1984; Lindsay, 1984; Davenport & Davenport, 1985; Deder, 1985; Steitz, 1985; Holtzclaw, 1986; Conti & Welborne, 1986, to name but a few). Without giving a lengthy overview of the literature I would like to confine myself to Mezirow's "Charter For Andragogy" (1984:137-138) to provide a few pointers for those involved in designing curricula for adult learners. I choose Mezirow for the simple reason that whichever philosophical frame of reference one could work from, Mezirow's charter still contains a great deal of truth. When designing curricula for adult learners it should be designed in such a way that it:

- Progressively decreases the learner's dependency on the educator;
- Helps the learner to understand how to use learning resources which includes the experience of others;
- Assists the learner to define his or her learning needs;
- Assists the learner to assume increasing responsibility for defining his/her own learning objectives, planning his/her own learning programmes and evaluating his/her progress;
- Enables the learner to organise what is to be learned in relationship to his or her own needs;
- Fosters learner decision making;
- Encourages the use of criteria for judging which are increasingly inclusive and differentiating in awareness, self-reflexive and integrative of experience;

- Fosters a self-corrective reflexive approach to learning;
- Facilitates problem posing and problem solving;
- Reinforces the self-concept of the learner as a learner and doer;
- Emphasizes experiential, participative and projective teaching methods.
- Makes the moral distinction between helping the learner to undestand his or her full range of choices and how to improve the quality of chosing versus encouraging the learner to make a specific choice.

3.1.2 Curriculum development

Although the development of a curriculum for cooperative education for professional degrees can follow any one of a number of systematic curriculum development models, I would like to emphasize that apart from the fundamental approach that theoretical academic work at university, practical academic work at the university and practical professional training should be approached in an integrated wholistic way during the development of the curriculum. The reason is simply that the learning experiences of the student becomes more meaningful and therefore relevant if the formal practical education at university is preceeded by appropriate formal theoretical education and the previous two preceeds appropriate practical professional training. I will not embroide on the development of a curriculum for cooperative education for the purposes of this paper but will confine myself in paragraph 3.1.3 to the distance implications for the learning experiences of the student whilst undergoing practical professional training. A matter for curriculum development at the micro level.

3.1.3 SOME IMPLICATIONS FOR THE PARTIES TO THE QUADRIPARTITE AGREEMENT

Although an exhaustive list of implications could possibly be spelt out I will restrict myself to those that I think the most important as far as the parties to this relationship is concerned.

(a) The Pharmacy Board

It is imperative for the Pharmacy Board to relinquish their total control over the practical professional training of pharmacists for cooperative education to be successful. This however does not mean total abdication by the Pharmacy Board. It implies the specification of minimum criteria for practical professional training as well as the evaluation thereof. The Pharmacy Board should enable the university, and to a lesser degree the employer, to assume full responsibility for the student's learning experiences and the evaluation thereof.

(b) The University

Probably the most important implication for the university as an institution is that of finances. The Baccalaureate programme for pharmacy would have to be a 5 year programme that includes the practical professional training as an integral part of the programme with no further tutelage required. At present the practical professional training falls outside the baccalaureate programme and therefore does not have any financial implications for the university. The university will not be subsidized for the practical professional training period in terms of the current SAPSE-system. The Committee of University Principals will have to negotiate with the funding body to include the practical professional training in the subsidy formula, albeit in some ways different to the subsidization of normal university courses. An expanded subsidy formula is necessary because, unless a Pharmacy Faculty is amply staffed, cooperative education by implication means more academic and administrative staff. It has been found that up to 300 students can be accommodated in a cooperative education programme without additional academic staff to handle the counselling of students, placements and evaluation of practical professional training (Meiring & Jacobs, 1984:15). In our situation

the number of students would make it impossible for the existing staff to cope with the logistics of the cooperative programme.

(c) The Pharmacy Faculty and its members

Apart form the fact that the faculty will have to embark on a total re-development of it's curriculum for pharmacy education and the fact that it's members will have to be schooled in curriculum development with special emphasis on cooperative education, the most important implication is certainly the fact that they will now have to deal with students that are physically removed from the university campus for part of their preparation for a profession. The Thesaurus of ERIC Descriptors define distance education as "education via communications media (correspondence, radio, television and others) with little or no classroom or face-to-face contact between students and teachers".

One of the primary goals of adult education is to foster the self-directed learning of the students (Knowles, 1975 and 1980; Touch, 1979; Mezirow, 1984). To my mind we fail dismally in reaching this goal in the formal on-campus academic programmes where students are "lectured" to and spend most of their time memorising reams of information to be regurgitated at a later stage. In the words of Usher (1985:59) we cannot "teach students as if they were empty vessels to be filled with the teacher's knowledge". In a recent survey at our university (reported in another paper at this congress: Du Plessis, 1987) it was found that 93% of our pharmacy students, across the board, stated that they could independently study at least 40% of the work they were being lectured on. Of the students 71,1% were of the opinion that they could study at least 60% of the work independently while 42,2% of the students made the same statement concerning 80% of the work. In the same survey 92,1% of our students indicated that they spend between 40% and a 100% of their time memorizing factual knowledge. Of the students 66,9% spend between 60% to a 100% of their time and 22% spend between 80% to 100% of their time memorizing factual knowledge. For 53,3% of the students the volume of the academic work was the single biggest problem concerning

their studies while only 8,2% indicated the degree of difficulty of the academic work as their biggest problem. If this is what takes place in the formal academic situation how are we ever going to foster self-directed learning at a distance? We can start by progressively decreasing the students' dependency on the lecturer. This can be done by making use of more independent study from the first year that the student enters the formal academic programme and increasing the degree of independence as he or she progresses to the 4th year. This is the beginning of fostering an internal change leading to a consciousness of the cause of their problems, an understanding of the range of available learning opportunities and an acceptance of the responsibilities for decision making. In this fashion they can be directed towards becoming autonomous learners proving for their own life-long learning needs. The learning experiences of the student should be developed in such a way that the overemphasis on factual knowledge and outdated methods are done away with.

According to Usher (1985:62) students see the university as a very formal institution concerned with the transmission of "scientific" knowledge and evalution thereof. They quickly realise that this is not what the real world is like. In the real world experience is both useful and important. They therefore take no responsibility for learning and their work becomes formal, abstract and arid, according to him. They also show a great dependency and are inhibited in the sense that the development of their expressive and critical skills are circumscribed through their inability to relate to meaning derived from experience. If cooperative education is implemented correctly the real world of work and the world of academe can be integrated into a meaningful whole where the students perceive the necessity of both. The students' learning experiences should be developed in such a way that they learn not only through experience but they should also be enabled to learn from experience. A reflective assessment of one's own experience is required in order to learn from experience. We should steer away from learning experiences that encourage rote learning of facts and theories. We should employ learning experiences that foster a search for understanding through meaning based on previous knowledge and experience (Usher, 1985:168).

It should also be borne in mind that the student will have to undergo his practical professional training in various settings, viz., the retail pharmacy, the industrial concern, the hospital and the community health centre. The development of practical professional learning experiences should be undertaken with the different requirements of the work situations in mind.

With what I have said so far in mind the lecturer concerned, employer and student should be involved in the development of the professional practical training programme. Because of the distance between the student and the university the developed programme and resultant learning experiences should be embodied in a document. A well designed guide and log book for control purposes must be supplied to the student before commencing his professional practical training. The degree of direct guidance given to the student by means of the practical training guide will depend on the student's level of development. Guidance in the first year of study will obviously be more direct and more comprehensive than for subsequent years. This guide, as well as the study guide(s) for the formal academic programme must be designed in such a way that it enhances the student's capability to function as a self-directed learner in terms of the pointers provided by Mezirow's Charter for Andragogy. Another implication of the distance between the student and the institution is the fact that the student, especially in his junior years of study, would be in need of some form of guidance to breach the chasm between academe and the world of work.

The classical concept of mentoring would serve a useful purpose in this regard. Mentoring as a learning experience for adults has already received some attention in the literature (refer to Bova and Philips, 1984 as well as Busch, 1985). Although mentoring can serve as a very valuable learning experience for the students, I approach if from a slightly different angle for the purpose of cooperative education. The mentor's role in this situation is one of a friend who can guide the new student into the professional practical world so that the transition is not too

traumatic. While the student is undergoing professional practical training he would need, apart from the employer who also fulfils a mentoring role, someone who possesses empathy, compassion and concern to turn to. After completion of the professional practical training experience the student will have a need to share his experience in such a way, that the experience will be reflected upon. The mentor will thus also have to act as a sounding board. A number of students should be allocated to a suitable lecturer who will serve as a mentor. This role of mentor is a role quite apart form that of the traditional co-ordinator in a cooperative education programme in that the mentor does not necessarily also have to be co-ordinator.

(c) The employer

The employer will now, unlike his traditional role as tutor of pharmacy pupils, be absorbed and become part of a well designed cooperative education programme. He will have special training needs. It might be for the first time that he encounters a systematically designed programme in which he will play a vital role. He will have to be trained for example in the use of learning objectives and the evaluation of the student's performance in the professional practical situation. He will also have to be schooled in his function as tutor (mentor). His responsibility and therefore accountability exceeds that of the present situation by far.

(d) The student

The student also needs to be educated to fulfil his part of the cooperative education agreement. He will have to be made aware of his role as adult learner and be provided with sufficient guidance to enable him to become a self-directed learner. This will only be successful if the learning experiences that he encouters are developed in such a way that it is meaningful and relevant. Special attention will have to be paid to the professional practical training that he has to undergo. The student will have to be educated to fully understand his role as well as the goals of the professional practical training and how it aught to be. He will have

to be inisiated into being a learner physically removed from his institution of learning. In short, he will have to master the art of distance learning.

4 CONCLUSION

As I have pointed out in my previous paper all is not well as far as the preparation of students for professional degrees are concerned. One way of rectifying the situation is to adopt a competency based approach to curriculum development. Such an approach will compel us to seek alternative teaching strategies. The strategy that I propogate is that of cooperative education. Cooperative education will eradicate the present academic education/practical training dichotomy. Co-operative education however places the residential university in a distance education situation, a fact that will have to be discounted in the curriculum development efforts of the university. This as well as the fact that we have for too long ignored the principles of adult education, will require an objective re-assessment by the university of their preparation of students for the professions.

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CAREER-ORIENTED TECHNIKON TRAINING (TECHNIKON PROGRAMMES) BY MEANS OF DISTANCE TEACHING, WITH SPECIAL REFERENCE TO LABORATORY-PRACTICALS AND IN-SERVICE TRAINING

by Z. VAN DYK
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In order to clarify my theme and my argument in this paper, I need, first of all to give a very brief background sketch of the nature and the philosophy of the technikon movement, as a tertiary subsystem within the education and training system in South Africa.

THE CHARACTER AND PHILOSOPHY OF THE TECHNIKON MOVEMENT

Over the past years these relatively young institutions, have developed into a subsystem with a distinctive character and philosophy. Parallel to, but also complementary to the universities at the tertiary level of education, these institutions have demonstrated beyond doubt that they have a unique role to play. Their phenomenal growth and development, as well as the specific kind of manpower they have turned out, serve as irrefutable evidence of a gap having been filled.

Every developing country, and that includes South Africa, (and this was strongly emphasized in the well-known De Lange report on the provision of education in South Africa), has a pressing need for vocation or career education and training, especially at tertiary level - that is to say, a need for people who are trained to meet the specific requirements at middle and high level of a particular vocation or a specialized part of it; people who have developed, through the interaction and integration of theory and practice while being trained, the particular techniques and skills required in a particular work situation; people who are productively useful immediately upon finishing their studies and who can apply their technological skills and knowledge immediately - in short, people who are pragmatists and practitioners.

This is exactly the type of manpower the technikons try to provide. (The substantial growth of the technikon movement can probably be ascribed to a certain extent to the damming up of the demand for this type of training).

Although the character and philosophy of the technikon as an educational and training institution is emerging more and more clearly, this concept is still being developed. And the more clearly it is formulated, the sooner the few remaining grey areas regarding the presentation of some courses - whether by the universities or by the technikons - will disappear.

In regard to teaching and training programmes, technikons follow a multi-disciplinary approach, since the application of technology is not confined to the field of science and engineering, but applies to the entire spectrum of learning, including the social sciences, commerce, the science of management and the arts.

Every training programme that is developed, originates from an identified need within a business sector - therefore demand driven programmes. And therefore every programme is developed with the focus on its application in practice. The programme of instruction must enable the trained person to be immediately useful and usable, in terms of an identified need, upon his having completed his specific programme of training.

In order to develop this kind of training programme and to produce this kind of graduate, the closest co-operation between the training institution and the business sector is essential, with the trainee being the focal point.

This essential co-operation in the training process and the involvement of the business sector or employer starts with the initial planning of the training programme and continues throughout the training process - especially in regard to the responsibility of the business sector or employer for providing in-service training and the practical experience that goes with it. All this is included in the concept which is now generally well known, that of "co-operative education".

The proper structuring and monitoring of in-service training programmes, as part of co-operative training, are now receiving more and more emphasis and attention. - and the Association of Co-operative Education which was recently established, has as one of its objects the study of these matters.

Clearly therefore, technikon training is not only practice-related, but to a certain extent "practice-located".

To sum up, we can say that a technikon is a tertiary educational and

training institution which, working as closely as possible with the sectors of commerce and industry concerned, conducts training in order to provide these sectors - according to their identified needs - with manpower having specific skills, the required knowledge of technology and practice, as well as the ability to apply this expertise effectively. In this way, these employees will be pragmatic and productive job practitioners at middle and top level, thereby helping to promote the growth and development of the sector of business concerned.

Against this brief background of the nature, the philosophy, the character and the training objectives of technikons as well as the characteristics of their training programmes, I now turn to:

CAREER-ORIENTED TRAINING EMBODYING THE TECHNIKON PHILOSOPHY, BY MEANS OF DISTANCE TEACHING.

Technikon RSA was established in 1980 following on a report by a committee, instructed by the Minister of National Education to investigate the need for and the desirability of a technikon for distance teaching.

We should therefore note that there was a very definite need for career-oriented tertiary training by means of distance teaching. I can state categorically that since the establishment of Technikon RSA this need has grown substantially and is still growing. Some of the reasons for this are self-evident. I would however like to believe that the assessment, by commerce and industry, of our past students and of the training they received by means of distance teaching, has also contributed towards the growth of this Technikon, which now has by far the highest growth rate.

It is generally accepted that training programmes are not all equally suited to being presented by means of distance teaching. Taking into account the characteristics of career education (technikon education) as I have described them, and their practice-relatedness, the question is often posed - how is this type of training done by means of distance teaching?

Basically, the answer lies in the concept of "practice-relatedness". Because technikon education is practice-related and the trainee receiving distance education is working full-time, and provided his work situation is relevant to his study programme, these circumstances are ideally suited for

this kind of teaching.

The fact that the student is geographically separated from the training institution and that the written word is the principal means of communication, therefore do not present any difficulties. The student's place of work must be seen as being an extension of the training institution, and with the necessary co-operation of those concerned (as I will indicate later), it should be utilised as such. (In more advanced training programmes, where the applied and developmental research component becomes increasingly important, distance teaching is even more ideally suited.

In terms of the technikon philosophy it is also true that some programmes lend themselves to distance teaching more readily than others do. And because Technikon RSA is a young institution which is still developing its infrastructure, priorities obviously have to be determined regarding the introduction of training programmes, taking into account the needs of commerce and industry.

But because Technikon RSA has an obligation regarding the needs of commerce and industry over a broad spectrum, we have started looking at programmes for which there is an urgent need by means of distance teaching, but which, according to some people, could hardly be presented in a meaningful way. A few such programmes are already being presented successfully and I shall be discussing them later in this paper.

There are also certain programmes which, according to traditional thinking, cannot and should not be offered by means of distance teaching. Owing to the urgency of the needs in the business sectors concerned, some of these programmes have also been considered. Schemes of work and mechanisms have been developed in co-operation with and to the satisfaction of these business sectors concerned, but these projects have had to be placed "on hold" pending a change in certain traditional ways of thinking.

I wish to deal with the presentation of career-oriented tertiary training programmes (technikon programmes) by means of distance teaching, under two headings, namely):

1. Programmes not having any laboratory-practical component in the curriculum.
2. Programmes which do have a laboratory-practical component in the curriculum.

PROGRAMMES NOT HAVING ANY PRESCRIBED LABORATORY-PRACTICAL COMPONENT IN THE CURRICULUM

Almost all the programmes in the Commercial, Management and related sciences belong in this category. These programmes obviously lend themselves most readily to distance teaching. I would like to show, however, how the features and philosophy of tertiary career training as defined in my introduction, are manifested in the training programmes through distance teaching as presented by Technikon RSA.

As a point of departure I wish to stress the following basic features of any technikon training programme, namely,

- the learning and acquisition of specific skills and sufficient knowledge of technology and practice which can be applied immediately in the work situation.
- training (especially in-service training) in co-operation with the business sector concerned (co-operative training).

The compiling of a programme to meet the requirements of the business sector is done by advisory committees on which the business sector which has identified the need is represented, together with technikon staff. These committees ensure on an ongoing basis that the programme meets the requirements of the profession.

Regarding the implementation of the training programme, it is very important to remember always that for the full duration of his training the distance education trainee is employed full-time in a post which is usually related to his study programme - in contrast to his counterpart in contact teaching who is placed in a suitable work situation for in-service training only periodically by means of a sandwich or other system.

In regard to certain training programmes Technikon RSA is now requiring in an increasing measure that the student be employed in a post that is relevant to his study programme or that he should at least have access to facilities which will be needed by him during the training programme. In this way the integration of his theoretical knowledge - for which the Technikon is directly responsible - and his knowledge of job practice is ensured. The distance education student therefore is usually continuously in a position to apply the theory in practice and vice versa. The

application of theory in practice, takes place continuously while the student is being trained - to the benefit of the student and the employer alike.

The proper structuring and monitoring of in-service training programmes in collaboration with the employers, is not yet what it should be and this is being attended to by technikons in general.

It should be borne in mind though, that there are practical reasons why employers can't always adhere strictly to an in-service training programme. But because the distance education student is a full-time employee, the employer can more readily plan for the employee/student to receive, as far as possible, the required exposure according to an agreed programme.

Assignments are also set in such a way that the student has to draw on his practical knowledge or he is obliged to obtain the required exposure to practice, in order to be able to answer the assignments. The assignment answers of the distance education student who is in full-time employment very often reflect a strong practical approach. In this regard, tutors naturally have the important responsibility of also keeping in touch with developments in practice.

The Technikon receives excellent co-operation from the education committees of certain professional bodies, who organize in-service training programmes themselves - because they are sensitive to the need for the student to have practical knowledge and skills in order to become a successful practitioner in those professions. Distance education is ideally suited to these professional in-service programmes because the trainees are full-time employees.

The involvement of the business sector, particularly in regard to in-service training, is therefore absolutely essential.

Staff shortages have been the main reason why the structuring, the correlating and monitoring of in-service training have as yet not been fully implemented. That is why the collaboration of professional bodies and their role as partners and as extensions of the training institution is so valuable, particularly in regard to the acquiring of practical knowledge.

PROGRAMMES WHICH DO HAVE A LABORATORY-PRACTICAL COMPONENT PRESCRIBED IN THE CURRICULUM

In general, the traditional and in my opinion somewhat outdated view is that these programmes can't or shouldn't be offered through distance teaching.

In regard to this category, there are undoubtedly certain priorities when factors such as infrastructure, costs, needs and logistics are taken into account. That there may be programmes which one would prefer - in the short term or even in the medium term - not to offer through distance teaching, may well be true. However I have no doubt that there are many more programmes which offer distinct possibilities of being presented through distance teaching - within the context of tertiary career training and with the collaboration of organized commerce and industry as well as employer organizations with their facilities.

There are two distinctive features that I wish to underscore and use as basis for my argument, namely,

(1) the "practice-relatedness" of the technikon training.

(2) the principle of co-operative training which implies the absolute involvement of the business sector or the employer.

For the purpose of my argument I accept that the distance education student is in a work situation which is relevant to his study programme.

Furthermore, I wish to maintain that the laboratory-practical component should not necessarily be viewed as being separate from in-service training - nor that the laboratory-practical necessarily need to be done at the training institution and in-service training at the employers - in any event, not in the case of the distance education student who is in a work situation which is related to his study programme and where certain facilities are available to him.

Because the practice-relatedness of the technikon and the principle of co-operative training form the basis of career education, I regard, as I have already pointed out, the business sector, the professional bodies and the employer with his facilities, as being extensions of the training institution. I believe this to be a realistic point of view - and I also wish to suggest that some employer organizations have the most modern and

advanced facilities, equipment which a training institution could possibly not afford. These facilities are surely the "laboratory" in the practical situation. Surely the employee/student working full-time in the "living laboratory of practice", in an atmosphere alive with the latest technological developments, has a wonderful opportunity of combining his theory, practicals and in-service training!

That this practical-cum in-service training needs to be properly structured and monitored and that greater involvement of the staff of the training institution and the employer is required, is true.

In this regard there are various possibilities waiting to be investigated, developed and practically implemented in distance teaching.

I now wish, as examples, to refer to specific programmes in the biological sciences which in embodying some of the principles and approaches I have mentioned, are being presented effectively, in my view, by means of distance teaching. The employers are in the best position to judge the effectiveness of the training in terms of the efficiency of past students as professional practitioners. Feedback we have had from employers so far indicate that we are on the right road, although possibly we are only at the beginning of the road.

NATIONAL DIPLOMA IN LABORATORY ANIMAL TECHNOLOGY

Some seven years ago an urgent need was identified for the formal training of staff employed in the laboratories of medical schools, the medical research institute and other research organizations, whose function is the care and preparation of laboratory animals for research programmes and assisting in these research programmes.

Because the number of students was not large and they were dispersed throughout the country, the programme could not be presented at individual residential technikons, and Technikon RSA was approached. In collaboration with the South African Association of Laboratory Animal Science, the programme was structured to fit the distance teaching situation.

No prospective student is admitted to the course unless he is employed at an approved laboratory whose facilities he may use, or at least be allowed access to these facilities. The evaluation of the laboratories is done by the South African Association of Laboratory Animal Science, in collaboration

with the Technikon. The purpose of the evaluation is to ensure that the facilities are such that the practical syllabus, which is an integral part of the programme, can be carried out properly - and to ensure the effective integration of theory and practice. Through the good offices of the South African Association of Laboratory Animal Science responsible senior staff are appointed at each laboratory as mentors to supervise the carrying out of the practical syllabus and where necessary to assist students. A report on each student's practical work is submitted to the Technikon. This again underscores the involvement of the employer. The laboratory-practical element is combined with in-service training in the work environment by using the facilities in the employee/student's work situation. Once a year during the second semester, all students at all levels have to attend a compulsory laboratory-practical course of one week. Here the students' skills as regard to the practical syllabuses which they have carried out during the year under the supervision of their mentors are evaluated, and certain remedial actions are taken. During this period the student has to pass a practical examination to obtain a yearmark for admission to the year-end examination. The mark obtained in the practical examination also forms part of the yearmark.

For this compulsory practical course the best-equipped facilities are used - those of the Animal Unit of the Witwatersrand University Medical School. This indicates the possibilities of co-operation between educational institutions in the mutual use of facilities.

The members of the South African Association of Laboratory Animal Science, as a professional body, have an important role at the practical courses. We receive excellent co-operation from this professional body and this makes a big contribution to the success of this programme.

Here truly is an example of a co-operative training effort between technikon, professional body, employer and another educational institution, to provide career-oriented training in such a manner that the student gradually becomes a more useful worker, and upon finishing his studies is an immediately productive practioner in this profession.

A start is being made this year with the production of microscope slides which will be sent to students as study aids.

Reports from employers suggest that they are very satisfied with our

graduates, some of whom have been appointed to senior posts.

Clearly, here is a course which viewed superficially and according to traditional norms does not lend itself to distance teaching, yet with sound planning, progressive thinking and co-operation between the various parties, it is being presented effectively and successfully to meet the needs of the profession.

I wish to refer briefly to another course about which doubts were expressed in some quarters regarding its suitability for distance teaching, namely

THE NATIONAL DIPLOMA IN NATURE CONSERVATION

Although this programme has no specific prescribed laboratory-practical component, because of its nature and composition, it falls in the category of programmes which some people have doubt about the offering by means of distance teaching.

This programme has been presented through distance teaching for several years now. and the student enrolment for this programme is increasing every year.

Generally, the students in this programme are on the staff of national and provincial nature conservation bodies, zoos, private game parks and game farms. Here again, the students are in a practical work situation which is directly relevant to the training programme.

The student is in the "living laboratory of practice" where practical work can be combined with in-service training - and our teaching methods take this into account. Where could one find better opportunities for on-the-job experience and the learning of skills than in the living reality of a nature conservation milieu with the facilities available to the student?

The proper structuring and monitoring of the in-service training programme presently receive the attention of the advisory committee concerned.

The Technikon presently requires the student to keep a diary during his in-service training in which he records his practical work. From time to time this diary is scrutinized by a qualified senior officer who confirms whether the student has in fact done the work as indicated. In the setting of assignments, tutors take account of the fact that different students work in different environments in which there are differences in emphasis

regarding various facets of nature conservation.

I have personally seen assignment answers from these students that have included examples and samples that can be available only to the student who is employed full-time in an environment where he has access to practical situations and facilities.

The co-operation of employer organizations in this programme is also warm and cordial - to the extent that lecturers, who may run the risk of getting out of touch with practice, have been involved in certain practical in-service training programmes and nature conservation projects. This keeps the tutor in touch with practice, and the personal contact with the employer and the student in the practical work environment is an added bonus.

Technikon staff from time to time attend organized information sessions at which students' problems are discussed and resolved.

Colour slides are now being produced and will be sent to students as study aids and to supplement the study material.

Several employers have expressed their satisfaction with the graduates who studied this programme by means of distance teaching.

The co-operation of the employers, together with the use of the employers' facilities and the work environment as an extension of the training institution, make it possible to offer effective career-oriented training, by means of distance teaching, to this profession as well.

THE POSSIBILITY OF OTHER PROGRAMMES HAVING A SO CALLED LABORATORY-PRACTICAL COMPONENT BEING OFFERED THROUGH DISTANCE TEACHING, AMONG OTHERS IN THE FIELD OF ENGINEERING: A LOOK INTO THE FUTURE

There have been several requests from the organized engineering and related sectors as well as from large employers' groups for the presentation of programmes by means of distance teaching.

A training programme in electrical engineering for a homogeneous group of employees in a large strategically important organization, performing a service that is in the national interest, was designed and planned some time ago at the urgent request of the organization, and in collaboration with its education division. The organization's facilities, certainly the best of their kind in South Africa, would have been available for laboratory-

practical work and the in-service training programme would have been properly structured and monitored.

Because the employees were a homogeneous group in the same organization this would have facilitated the effective presentation of the programme. Possibly this "experiment" could have served to convince some sceptics.

Unfortunately this programme has not yet been introduced because of a hesitancy and sceptisism, still found in certain circles, about the presentation through distance teaching of programmes having a laboratory-practical component and more specifically in the engineering disciplines.

As a developing country with needs that are unique, the RSA has a pressing need for career-oriented middle and top level manpower - to promote and stimulate technological development and progress, thereby not only creating more jobs but making the RSA less dependent on imported technology and enabling it to compete on world markets.

It is therefore extremely important that all ways and means be investigated and all existing systems and training structures be used to offer effective tertiary career training over the broadest possible spectrum, without sacrificing the quality of the training.

It is my view that in this regard distance teaching has not as yet received the attention it deserves.

Reform is taking place in the political and constitutional fields in order to build a better future for all the inhabitants of our country. Some holy cows have been demolished while others will probably also have to go. In these areas, there has been a total renewal of thinking.

I would like to urge a similar rethink in regard to tertiary career-oriented training over a broader spectrum of careers by means of distance teaching.

The need, or rather the necessity, is there. The business sector's and employers' groups have a positive attitude towards co-operation and are sensitive to the need for training. Distance teaching is available as a medium. The potential only needs to be further investigated and developed and traditional ways of thinking to change.

Of course the training institution's infra-structure, the cost implications, logistical factors, collaboration with the business sector for the use of facilities and other relevant matters, need to be taken into account.

Every programme is dealt with on this basis in any case.

All that I am urging is fresh and innovative thinking. In the interests of our country, let us not overlook the enormous potential of distance education in tertiary career-oriented training, over a broader spectrum of disciplines, including those having a so called laboratory-practical component.

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2025*

THE DEVELOPMENT OF A COMPUTER PACKAGE FOR DISTANCE EDUCATION ACCOUNTING STUDENTS

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Department of Quantitative Management and *The Good Experience Company

1. Educational need

We are living in the age of computers. Progressively business is computerised and nowhere does the computer find such natural application as in the field of accounting.

In order to keep up with these developments auditors find that they need to be computer literate so as to operate accounting computer systems and to be able to properly audit such systems. In addition they need a certain knowledge of system design in order to evaluate systems and make recommendations to clients.

In recognition of this situation the Education Requirements Committee of the Public Accountants' and Auditors' Board has recently recommended a greater emphasis on computer literacy and systems design.

We have given the matter considerable thought and in view of our experience which ranges from computers to distance tuition and accountancy we realized that the tuition should be practical rather than theoretical.

Practical tuition means in our perception, hands on training with software which supports the education process (Wolvaardt, J S and Wolvaardt, D E (to be published)).

2. Why is software so hard to use?

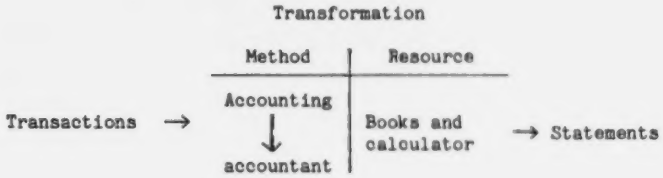
There are many software packages available, but very few which are understandable and easy to use.

This may well be due to the fact that many creators of software do not use the scientific approach of conceptualising and classifying concepts when

developing software. The end result is an incomprehensible program which is very difficult to use. The basic problem is that systems attempt to be as general as possible and in the process loose consistency and then resort to an unsatisfactory ad hoc approach. This type of package can obviously not be used in education.

To understand the role of software consider the following:

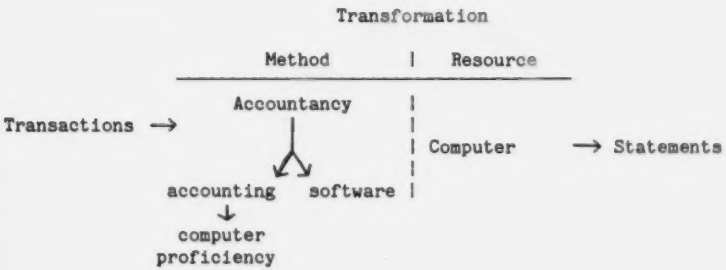
An accountant must ensure that transactions are processed to a logical conclusion. This process can be represented schematically, as follows:



When the accounting process is computerised the transformation process is influenced in the following ways:

The computer is the resource which is harnessed by using software to do some of the "work" (method), multiplying the computational reach of the accountant. The accountant now has less manual accounting to do, but he must acquire a measure of computer proficiency.

Schematically this can be represented as:



If the accountant's involvement decreases as a whole and good accounting principles prevailed, the system is successful. However, the opposite could happen - the work and frustration could increase, and doubt about the integrity (correctness) of the computer system will arise. In this case the accountant might decide rather to revert to a manual system.

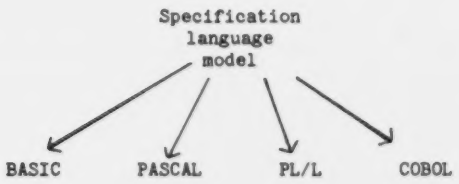
3. The approach to designing a package

3.1 Theoretical background

We advocate a scientific approach to developing software. The application must be analyzed in order to identify and classify the key concepts. Once the key concepts have been identified they can be expanded in more detail and a model can be built.

This approach is similar to an approach which was followed in the tuition of programming languages (Van Rooyen & Wolvaardt, 1984) and (Van den Heever et al, 1983).

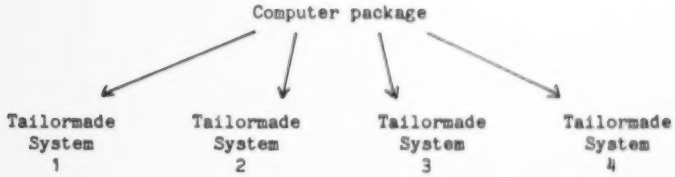
In this case a model was built of all the desirable concepts of a programming language and a specification language designed to describe the concepts. This model was then used to teach different programming languages.



We have a very similar situation when developing software. The same type of distinction exists between tailor-made software and a package. The tailor-made software can be considered as the development of a system(model) for a specific example of an application.

In practice we find that there are different approaches and preferences in accounting. When a specific accounting process is computerised, a tailormade model is built.

We feel that an accounting package must be an "abstracted" model in terms of the individual models.



3.2 Practical approach

The GOODX business software is designed along these lines.

A package is usually born with a specific assignment for a problem.

The GOODX financial system started as a tailormade system for a rather big service entity. This system was developed by using the specification language (Van den Heever et al, 1983) to describe the model, the advantage being that we could rethink the model and change it, before translating it into a programming language. The result of this approach was that this system was implemented after six weeks, and it was 95% debugged after the first month's data and almost 100% debugged after the second month. Our second assignment was again a service entity but with different needs. The first model was expanded to accommodate the needs of the second concern. By this is meant that a concept can be expanded and the mdoel has to be rewritten to handle the new concepts.

From this point we started to develop the package. We had to introduce trading entities. This is a dynamic process of expanding the model to accommodate as many demands as possible.

The result is a very powerful package which is easy to use.

Specific requirements

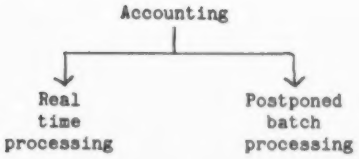
The Department of Applied Accountancy stated the following requirements for the package and course and they were all met in the following way:

bilingual	A separate Afrikaans package was developed but due to the fact that the development environment is dynamic we had to and succeeded in fitting the two languages into one package.
user friendly	Because of the principles applied and a consistent author's language it was inevitable that the end result would be a particularly user-friendly package.
support of good auditing principles	That is indeed the case.
run on a dual drive IBM-compatible computer	We are quite happy to be able to say that the entire system fits onto one floppy disk. This was facilitated by the use of TURBO PASCAL.
the price should not exceed that of a text book.	It is obvious enough that one cannot supply a full accounting package for the price of a text book. This was solved by **restricting the package** in such a manner that the student could make full use of all the facilities but the system cannot be used commercially.

4. Classification of concepts in the accounting process

In the process of determining the key concepts of accountancy we arrived at the following classification (Wolvaardt et al (to be published)).

. Time



Real time processing

- . direct invoicing and perpetual stock system
- . all transactions recorded as they occur
- . the system is immediately updated

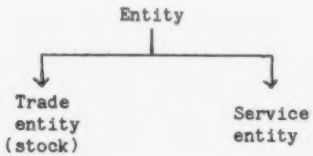
Postponed batch processing

- . no direct invoicing and periodic stock system
- . transactions recorded afterwards in batches

The "batchprocessing" financial system is the one used at Unisa.

Entities

As already mentioned different entities were considered and for this version the two main classes are:



Cost centres

The cost centre idea is very much in vogue and forms part of many accounting systems.

It is sometimes very difficult to see how this can be applied in a particular case.

Cost centres for a trading entity.

In this case the stock items are classified into the cost centres.

Cost centres service entity

The services are classified into cost centres.

To ensure consistency in the GOODX package all entries into the income and expenditure accounts as well as the sales and purchases journal are allocated to the different cost centres.

Accounts

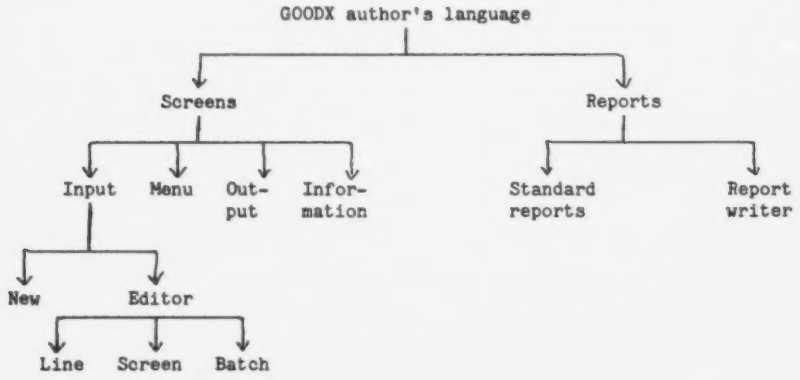
All accounts in the GOODX package are classified into the normal accounting categories. The account number is composed of a block code, which identifies the category of account and a serial number.

This contributes to the accuracy and user-friendliness of the program.

6. The author's language

This warrants a full discussion (Wolvaardt et al (to be published)).

Schematically one can represent the author's language as follows:



7. Experience

The first version was sent to students during 1986. The reaction was very positive. Certain problem areas have been identified and were rectified.

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2027*

THE DEVELOPMENT OF DISTANCE EDUCATION FOR TRAFFIC POLICE

Prof M G T Cloete
on behalf of Lyceum College
and the Moderator of the Institute of Traffic Officers

Advanced education and training can undoubtedly contribute a large measure towards the professionalisation of the traffic police. Researchers are giving an increasing amount of attention to the role of higher educational qualifications and occupational training in this regard. The constant emphasis on improved education and better training for all South African workers at all levels of the occupational spectrum, whether in the public or private sector is well-known. The reason for this concentration on education and training is the increasing realisation of the value and usefulness of a well educated and properly qualified worker in terms of optimum performance, cost effectiveness and productivity. In this regard the point can be made that better qualifications are a means towards obtaining professional stature and a professional image. The education and training of traffic police can therefore be constructively considered in terms of the theme adopted for this conference.

The development of the education and training of traffic police in South Africa

The Institute of Traffic Officers of Southern Africa and the various provincial administrations were and are still being instrumental in the development of the education and training of traffic police.

Soon after the creation of provincial and municipal traffic departments, an immediate need was felt for specialised training to supplement the in-service training provided at the time by assigning a junior officer to several weeks duty in the company of a more experienced traffic officer, which concluded his training.

The need for additional education and training led to the establishment of the Institute of Traffic Officers of Southern Africa in 1936. Through the active endeavours of its executive committee an educational programme was instituted and examinations was for the first time written during November 1939. Naturally the institute's first courses were not very comprehensive. As time went by adjustments were continually implemented to raise the standard and to widen the scope of education and training. The entire syllabus

was revised in 1972, and further revision was undertaken in 1976. The upgrading of subject contents was completed two years later. The institute approved and implemented the amended syllabus, and subject contents in 1979. The responsibility for administering the education and training was assigned to Lyceum College with a view to further improvement. The three year course offered up to the end of 1986 included subjects such as the following:

Official languages;
traffic science;
traffic legislation;
communication science;
South African criminal law;
law of criminal procedure; and
criminology and ethnology

A restructured three year tertiary course through distance education was introduced with effect from January 1987, the details of which will be discussed later.

The institute of traffic officers in liaison with other interested organisations was also instrumental in creating opportunities for academic education for traffic police at the University of South Africa.

The important role played by the four provincial administrations in the educational and professional enhancement of traffic police dates back to 1961. In 1964 a course of theoretical and practical training for traffic officers was introduced. With the course of time the minimum standards of training were drawn up. Following certain recommendations on training by an interprovincial advisory council the educational and training was standardised. The appraisal thereof reveals that definite progress has been made, although the training meets only minimum requirements.

In addition to the education and training that has hitherto been available to traffic police in South Africa, a clear need for continued professional and educational training has become apparent, with the result that a considerable number of traffic officers have attended and are still attending courses to this end, mainly at universities and institutes in the United States of America but the academic boycott campaign is closing these opportunities. The fact that South Africans are already and will in future be barred from enrolling for these educational programmes at some of these institutions, places greater responsibilities on the Institute of Traffic Officers

to provide meaningful education and training. Other overseas alternative will have to be found and liaison is being made for development of comparative studies.

The latest developments with regard to the education and training of traffic police

Over the past years close attention was again paid to the education and training of traffic police, mainly with a view to standardising and improving their available training. The need therefore was inter alia substantiated by research undertaken in response to the advocacy of such training by the Moderator of the Institute of Traffic Officers with the examiners and the section for curriculum development of Lyceum College. Consequently important adjustments were made to the existing diploma course of the institute of traffic officers, which is undoubtedly the most important post basic educational programme for which traffic police in Southern Africa may enrol. The upgrading is not only aimed at improving the content of the different courses to become vocational orientated but also to provide an improved method of distance teaching since part time tuition is not feasible.

The restructured educational and training programme which extends over three years is based on the requirements of a national diploma. In terms of legislative requirements (The Local Authorities Training Act of 1984) the Institute of Traffic Officers is bound to register its courses with the Local Authorities Training Board.

The teaching programme which was developed and recommended by the Moderator, and Lyceum College to the Institute of Traffic Officers was adopted and incorporates the following:

Admission to the course

A problem which exists regarding the education and training of traffic police, is the fact that the official entrance qualification to the profession is only Std 8. As the diploma course is rated as a post matric qualification traffic police who are not in prosession of Std 10 (National Senior Certificate or a conditional exemption on the grounds of mature age) will only be permitted to enrol conditionally for the first and second year of study. The final year of study may therefore only be undertaken by those officers who comply with the requirements of Std 10.

Structure of the course

The educational programme extends over three years. Successful completion

thereof required a pass in each of the following twelve subjects:

Traffic Science I, II and III;
Traffic Legislation I, II and III;
South African Criminal Law I, II and III; and
Criminal Procedure and Evidence I, II and III

The tuition programme

A semester system is followed in respect of each subject. Each semester course comprises a number of study units. Clearly defined study aims and objectives are set and students are carefully guided through their study material to accomplish the study aims.

Recognised study techniques are incorporated in the study guides to promote meaningful study, viz.

Programming

Students are provided with a recommended study program which will lead and guide them through their studies in the available time. Ample provision is made for regular revision to ensure that they will be able to understand and know their tutorial matter. Students can adapt the recommended study program to their individual needs. The essential part thereof is, however, to ensure that they study on a regular basis, do the necessary revision and in this way enable themselves to accomplish their aims from one semester to the next.

Self evaluation and testing

Due care is taken that students have ample oppotunity to evaluate their level of knowledge and understanding. At regular intervals in their study material students are confronted with self-evaluation tests. If they are unable to answer these tests adequately it implies that they have to do serious revision. Certain assignments also have to be submitted for evaluation. The nature of these assignments compel students to study all their study material.

As students progress with their studies, emphasis is progressively placed on critical thinking. They are also required to integrate knowledge they have gained in the working situation with their tutorial matter, evaluate specific systems in terms of what they have studied. The reason being that their educational and training programe are aimed at professional and occupational training. Even elements of using discretion and decision making in criminal law are analysed in the third year being a new area of research

and enquiry.

Study aids

The introduction of various study aids such as audio cassets, videos, etc. are under consideration. Professionaly prepared audio tapes are presently introduced in order to explain the nature of a particular course, motivate students, explanation of those sections of the tutorial matter which may probably cause problems to students. The introduction of study aids is still in an early phase of development but offers new innovative opportunities for expansion in this field of tuition.

Personal contact

The value of personal contact and regular interaction between student and tutor is realized. Although some contact can be established by means of audio and video tapes, face-to-face interaction is deemed as an essential part of the tuition process. With this in mind discussion classes are now introduced at different centres countrywide to enable students to meet their tuitors and to discuss any problems that they may encounter.

It can be assumed that any model which is being developed to improve distance teaching will not necessarily suit all students. Personal preferences, family conditions, working hours particularly in the case of traffic police, personal motivation, etc. will all have an effect. It, however, does not detract from the fact that distance teaching is and will remain the only means of effective education for the traffic police. This provides sufficient motivation for the continuous development of the system and improvement thereof. Comparative studies in the field of traffic engineering and traffic control are subjects for future development.

Professionalisation of the occupation of traffic police

In view thereof that the education and training is aimed at the professionalisation of the occupation of traffic police, a few remarks could in conclusion be made as regards to the professionalisation.

What is professionalisation?

There are numerous identifiable approaches in this regard, and a variety of factors that influence and promote professionalisation are emphasised. For the purpose of this paper consideration will be mainly given to the role of training and the related factors that benefit from it. Training is and will become increasingly relevant to traffic officers.

Professionalisation entails enchangement of both the quality of service and the accomplishments of workers. This approach implies that routine practitioners of an occupation cannot be regarded as professional merely in view of the nature of the career or permanent occupation in that practise, but that they must earn this status by developing such proficiency in their field of endeavour that they are enabled by their wide-ranging knowledge and commensurate self-confidence to acquit themselves creditably of their appointed task.

Specialised education and vocational training is the most essential element of professionalisation and is universally recognised as such. Researchers refer in this regard to high admission standards, lengthy training processes and the systematic study of theory.

Emphasis is placed on specialised knowledge and technical skill; commitment to an ideal; peer evaluation; responsibility and self-management; internalised professional standards that govern decision-making; emotionality and neutrality; clearly defined and permanent status as a practitioner of a particular occupation and public recognition of the professional status of such occupation as the main characteristics of professionalisation, with particular reference to specialised knowledge and dedication. The professionalisation of an occupation can be greatly facilitated if the abovementioned characteristics are gradually accumulated. This evidently means that the professional status of traffic police cannot be judged from the profession's inevitably subjective assessment of its own worth, but must mainly be measured against particular criteria and the extent to which they are fulfilled. Training transforms a profession so that instead of being a mere function it becomes a distinctive way of life. It gives a particular direction to the interests of the individual concerned, forms values, sets standards, determines the patterns of relationships between people, and so on.

A few of the major factors that promote professionalisation will now be briefly considered.

Specialised knowledge

There can be little doubt that the difference between a professional and nonprofessional occupation hinges on the possession or not of genuine high-level knowledge and expertise. These capabilities are usually acquired over a protracted learning period and are also characteristic for most practitioners of nonprofessional occupations. Thus the emphasis must not only be on knowledge "acquired" in practice, but also to a large extent on a recog-

nised system of theoretical knowledge that must serve as a rational base for application in practice.

Reference has already been made to the in-service training of traffic police which is compulsory and to some extent standardised and centralised. It is clear from the observations made above with regard to this training that it is not entirely conducive to the acquisition of professional knowledge. Additional theoretical knowledge relating to service and practical training must be included or added later so that greater professional efficiency can be achieved. New and more momentous insights can also be attained by this means, which will help to foster a critical approach to both the existing theoretical framwork and the practical procedures followed. On the other hand it will also stimulate intellectual activity that may result in greater efficiency.

Formal professional and academic instruction, which must be provided in continuation of the traffic officers's in-service training, must meet the following requirements:

- It must be abstract and formulated in a set of clear principles.
- The acquired knowledge must be concentrated on, or offer explanations for the problems encountered in practice.
- The clientele (road users) must accept that professional knowledge can be an aid to solving problems.
- The community must accept that particular tasks are entrusted to the profession because its practitioners possess opposite and adequate knowledge.
- The profession must actively promote the expansion and acquisition of knowledge, and it must have the final say about questions within its particular sphere of competence.
- The nature, scope and degree of sophistication of the acquired knowledge must be beyond the scope of ordinary citizens.

Loyalty to the profession and what it stands for

If the practitioner of the profession of the traffic officer has had sufficient education and training of an academic, vocational and a practical nature, the realisation will win through that the task performed is an end in itself and is its own reward. As this realisation becomes noticeable the road user will develop greater confidence in the profession and will accept that his interests are the first concern of traffic officers.

The traffic officer's greater knowledge and dedication to his task will:

- help him to determine the client's (the road user's) needs. Deference to the client's judgement will detract from the status of the profession. An important principle that applies here is that the practitioner's determination of needs will turn on his expert knowledge and his profound grasp of the implications of his decisions; and will
- help to inculcate public awareness of the profession's active persuit of professional goals.

Loyalty to the profession is not only promoted by higher levels of knowledge, but actually demands the constant, active involvement of the practitioner in the quest for and acquisition of more knowledge. Such activity must be beneficial to the traffic officer.

The status of the profession

The status of an occupation may be of great significance to its professionalisation. Professional status is measured against various criteria, and specialised knowledge and educational qualifications are only two of the weightiest considerations in this regard. A salient aspect here is the educational qualification and training of junior practitioners of the profession, who frequently constitute the points of direct contact with the community, particularly where traffic officers are concerned. An unfavourable situation at this level often neutralises all other positive factors and damages the status of the profession as a whole. Enhancement of educational qualifications and continued training of practitioners on the lower rungs of the professional ladder must therefore receive constant attention. This can greatly assist professionalisation at both the individual and the institutional level.

At the individual level the acquisition of higher educational qualifications and specialised training promotes a professional attitude and better insight into human behaviour. It also promotes self-esteem and self-confidence, helps to gain the esteem of the public at large, and creates the important situation in which the traffic officer is at least on an equal educational footing with the members of the public with whom he has to deal every day. Higher educational qualifications will not inevitably inculcate particular attitutes, but they nevertheless provide background knowledge that facilitates reasoning in situations where this is required. Moreover a great sen-

se of responsibility towards the profession is developed by this means.

Institutional professionalisation presupposes not only a high level of training and individual professionalisation of the majority of members representing the relevant occupation, but more especially, advanced training of the group consituting the leadership of the profession. The latter will contribute significantly to the professionalisation of the occupational group by means of their decisive influence on it.

It can be concluded that specialised academic knowledge exerts an important influence on the characteristics and requirements that determine the hierarchic position of one profession among the rest. Thus higher educational qualifications are a means whereby both the individual traffic officer and the occupation can acquire professional status. However, the knowledge acquired must relate exclusively to the functional sphere of the relevant occupation. In addition an accepted theoretical framework must be constituted so that it equips those using it to deal competently with practical problems.

Conclusion

The training of traffic officers has improved considerably in recent years. This does not constitute grounds for complacence in the profession, however, because modern society is changing rapidly and is confronting professions with increasingly stringent demands. Training and teaching and educational techniques must therefore be constantly adapted, and the knowledge conveyed must also keep pace with the growing demands the traffic officer will have to meet. Both practical and adademic training must be standardised. The necessity of "further" training imposes a highly important task on the South African Institute of Traffic Officers and Lyceum College which will depend on continuous cooperation and development of educational and teaching systems.

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PROFESSIONAL DEVELOPMENT IN VOCATIONAL COURSES SUCH AS SOCIAL WORK WITH SPECIFIC ATTENTION TO FIELD INSTRUCTION

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1. DEFINING SOCIAL WORK

Social work is a profession which focusses on the interface of people and their social environments. A definition by Pincus and Minahan, 1975:9, can be quoted in this regard: "Social work is concerned with the interactions between people and their social environment which affect the ability of people to accomplish their life tasks, alleviate distress, and realize their aspirations and values. The purpose of social work therefore is to (1) enhance the problem-solving and coping capacities of people, (2) link people with systems that provide them with resources, services and opportunities, (3) promote the effective and humane operations of these systems, and (4) contribute to the development and improvement of social policy."

The above purposes of change and improvement in the individual's social functioning and in the community's functioning, are achieved through the use of "a systematic series of actions" (Pincus and Minahan, 1975:85) or a process which takes place in the stages of contact, contract, action and termination.

2. PROFESSIONAL SOCIAL WORK EDUCATION

Professional social work education focuses on enabling students to achieve the abovenamed purposes and it is directed towards students acquiring:

* knowledge or a factual basis which can serve as a point of departure and which can direct the practitioner's actions;

* a system of values which determine the practitioner's view of people and his behaviour towards people;

* skills that combine knowledge and values and transforms it into action

Certain basic principles are followed in the development of the curriculum for social work education.

It is goal oriented. The goals are arrived at by answering the question by way of research and feedback from social work practice: what must a newly graduated social worker know (cognitive area), what attitudes must he have (affective area), and what must he be able to do (psycho-motoric area) in order to function as an autonomous effective social worker.

Goals are broken down into sub-goals for each course and goals are spelled out for both theoretical content, laboratory programmes and field instruction. Learning experiences are identified by which these goals can be met and the level of achievement (standard) is specified for each course to enable the assessment of students.

The following general principles are followed regarding the total curriculum:

Continuity - That is, certain theories, themes, methods, approaches and techniques are repeated in the courses over the four year period by various ways and means eg assignments, theoretical study, reading assignments, laboratory programmes, learning experiences in field instruction.

Sequence - Course content is ordered in such a way that it enables students to increase their levels of knowledge, skills and use of values progressively. Regarding skills for instance, the activities progressively move from drilling these skills in a protected environment such as simulation and role-playing, to testing these skills in an intervention with a client. Expectations regarding knowledge range from knowing or recalling material to the level where the student can critically evaluate the theory. Decisions are also made regarding the timing

of the practical work learning experiences to match the level of students' theoretical progress.

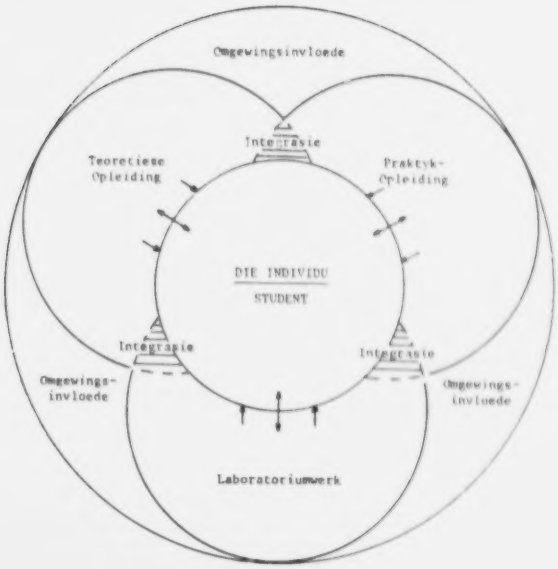
Integration - The various contents form a meaningful whole to enable students to experience the interrelatedness of the various elements. The field instruction provides excellent opportunities for integration when students apply theories, skills and values in the practical work situation.

3. FIELD INSTRUCTION AS INTEGRAL PART OF THE CURRICULUM

Unlike education in many other subjects, education for social work is professional education, or preparation for practice, or then education for use. Attention is given not only to theoretical instruction, but also to instruction in practice settings, or field instruction. Field instruction can be regarded as an integral part of the training of social workers. The overriding goal is "the integration of knowledge, skills and values into a concept of oneself as a professional and into a style of practice consistent with the knowledge, skills and values that define the social work profession". Hamilton and Else, 1983:19.

Field instruction provides the opportunity for the individualization of the students' learning needs and adaptation of teaching to these needs; it provides the opportunity for a student to put his knowledge and understanding to use and to experience himself in a professional role; as he must be able to use himself in dealing with people, he has the opportunity to develop his abilities and skills under the guidance and help of others; to learn the process and methods of practice according to an educational plan with his autonomous functioning as practitioner the end goal.

The curriculum for field instruction forms an integral part of the total curriculum and the content presented is determined by the goals for the total curriculum. It is but one mode of learning while theoretical knowledge, laboratory training and practice sessions form the other modes. Integration between these various aspects of teaching takes place as indicated in the diagram below. Jacobs, 1980:23.



In the development of the field instruction curriculum, attention is given on the one hand to the tradition, orientation and philosophy of the University where the teaching takes place, and on the other hand to the needs and expectations of the social work profession by preparing practitioners who can meet the demands of practice.

Professional training cannot be apprenticeship training where the emphasis is on doing and the student learns inductively by deducing theory from practice. Neither should it be so academic that the student is expected to make deductions regarding practice from the theory presented. It should rather be an integrated approach where there is a balanced relationship between cognitive and experiential learning. The Social Work Department, student and field instructor share responsibility for the learning experience. High priority is placed on conceptual learning.

With the above principles and formulated goals in mind, certain decisions regarding the students' fieldwork have to be taken against the facts of physical distance between lecturer and student; the diverse

student corps which represents a great variety in terms of age, life experiences, capabilities, qualifications, socio-economic circumstances, developmental level, etcetera; the fact that students are often employed and that they have to use their vacation leave to do their practical work.

Decisions have to be taken regarding:

The **format** of field instruction - in other words whether to have block field placements or concurrent placements or combinations. The decision is to have a week's block placement at a welfare agency at the beginning of the year for each course (with the exception of the first year course) and concurrent practical work for the remaining 'academic' year, ie until the end of August when all requirements must be met. Learning experiences for each course are specified and the experiences and the standard to be achieved are contained in a guide for practical work for each course.

The **timing** - when in the course the practical work should occur. Here the decision is that practical work takes place after completion of the laboratory programme and continues for more or less seven months until the end of August.

The **length** - how many hours per course should be used in field instruction in comparison with theoretical work. The number of hours increases progressively per course from 120 hours in the first year to 330 hours in the final year of study.

The **number** - how many placements should a student have in the course of his training. Disregarding the first year's practical work which is of a different nature, two placements per student are arranged in the course of his training. The goal of the first placement is to introduce the students to the generic core of social work, and the second placement is in a specialized field of practice. The third/fourth year placement is a continuous placement which enables stud ts to continue in the same setting on a more advanced level in the final year of study.

4. PRACTICAL WORK PLACEMENTS

Existing social service agencies employing registered social workers, provide the practical work placements for social work students.

Welfare agencies and training centres are mutually dependent because agencies depend on the educational institution for its professional staff and the educational institutions are dependent upon the agencies for fieldwork experiences.

The selection of appropriate agency settings and field instructors (see next section) is a prerequisite for any field instruction programme. Difficulties are experienced in standardizing this learning experiences of students in the practical work because of a variety of settings where students are placed ie differences in the agencies' approach, client corps, differences in training and background of the field instructors, differences in the students' level of development and experiences, etcetera. These factors are aggravated when welfare agencies, students and field instructors are spread over the country and all concerned acknowledge a dire need for personal contact to ensure effective field instruction.

The Department of Social Work at Unisa has developed a model by which these hampering factors are eliminated and personal contact is established:

* All lecturers are involved in the design, guidance and control of the practical work of students, while a practical work liaison lecturer undertakes overall responsibility for directing the arrangements for all practical work activities country wide.

* Fieldwork co-ordinators are appointed as temporary part-time staff members in the bigger centres: Johannesburg, Pretoria, Durban and Cape Town. They are actually extensions of the lecturers of the Department and responsibilities are delegated to them. One of their tasks relates to the field instruction of the students in their specific geographical area. These co-ordinators obtain the cooperation of welfare agencies, explore the kinds of learning experiences the agency can offer and de-

termine whether the agency meets the criteria as specified for an appropriate placement. Preplacement interviews are held with agencies in which an educational diagnosis on the student to be placed is shared with the agency. This is based on the student's previous year's performance. A screening interview with the student (with the lecturer or coordinator present) is held in which the agency decides whether they can meet a student's needs, and for the student to decide whether he wants to work in this agency.

* Both the student and agency are oriented towards the goals for placement and the requirements. Specified learning experiences and expectations are contained in a study guide provided to the agency. Great effort is made to match the student's educational needs with what can be offered in the agency.

Unfortunately there are factors which often mitigate against the best possible placement, for instance the number of students who have to be placed versus the number of placements available; the competition between universities for student placements; the cost to agencies who have to spend considerable time on student supervision and who cannot afford it in view of the economic recession, the overload of social workers and agencies to provide all the welfare needs while posts are frozen.

New ways had to be found to be able to provide appropriate field placements. The answer to this problem was found in the establishment of **student units** attached to welfare agencies and consisting of between 10 to 12 students per unit. A field instructor is appointed jointly by the welfare agency and Unisa and Unisa provides a job description pertaining to the functioning of the student unit. As a result, the quality of supervision and field instruction students receive is guaranteed; lecturers can spend their time more efficiently and effectively with one supervisor instead of attending to numerous supervisors; students experience peer support and healthy competition develops while they work in the unit.

The added advantage which comes to the fore, especially in the black student units, is the positive effect it has on the community. Because students act as 'public relations officers', they bring the services of

the agency to the attention of the community and as a result there is an increase in the intake of cases. Secondly, more volunteers offer their services and they now assist with various activities at the agency. Group work and community work projects which have been started by the students are now continued by the social workers at the agency, all to the advantage of the community.

5. FIELD INSTRUCTOR/STUDENT FIELD SUPERVISORS

.1 Responsibilities

There are certain distinctive characteristics of the field placement. One of these is the supervisory relationship between the field instructor (supervisor) and the student. Supervision is an integral part of the educational process for student social workers. This relationship assumes a prominent role in the transmission, assimilation and application of the values, knowledge and skills of social work practice (Kolevzon, 1979:241).

Field instructors become a real part of the Department and members of the University's teaching team and they perform a substantial role in executing the educational task in the field setting. A supervisor can be defined as an agency staff member "to whom authority is delegated to direct, coordinate, enhance and evaluate the on-the-job performance of the supervisees for whose work he is held accountable. In implementing this responsibility the supervisor performs administrative, educational and supportive functions in interaction with the supervisee in the context of a positive relationship" (Kadushin, 1985:24). Field instructors or student supervisors have a dual responsibility of ensuring appropriate service to agency clients on the one hand, and on the other hand to train students to enter the profession.

Supervisors are also responsible for teaching professional role models. They must create a climate conducive to learning where the student's self esteem and feelings of worth are supported and at the same time they must provide the knowledge and skills that will ena-

ble the student to master the experience successfully, and to develop both professional competence and a professional identity. (Amacher, 1976:213)

A field instructor can only be effective if she works within a facilitating environment and has the assistance and support of other staff in the agency. The attitude of the staff and the atmosphere in the agency can either enhance or subvert the supervision process. This is why selection and preparation of an appropriate welfare agency is so important. (Curnock & Prins, 1982:509)

.2 Selection and appointment

Certain criteria are specified against which supervisors are selected, eg: they must be graduated, registered social workers; have experience in the agency they are working for; have positive feelings towards the student, the agency and the social work profession; must have sufficient time to devote to students; spend time to become acquainted with our Department's social work theory; be willing to attend courses; be willing to identify with the Department; be able to represent it and work in close tandem with the lecturers; be well motivated and interested to take on a teaching role.

The decision to appoint a supervisor/field instructor is taken by the agency director or senior staff in conjunction with Unisa staff. Their appointment is authorized by the Principal of Unisa.

Although there is a turnover in supervisors, this Department has established a nucleus of persons who regularly supervise our students.

.3 Supervisor's training

A number of practical steps are taken to ensure that all the parties concerned work from the same perspective. These include:

An orientation programme which is given by the teaching staff and during which attention is given to Unisa's philosophy of practice, the theoretical approaches and teaching goals. Standards and guidelines are provided in a manual for supervisors, but these are also discussed during personal contact with supervisors which takes place before commencement of the students' practical work.

Regular meetings between lecturers/co-ordinators-supervisors-students. The purpose is to review students' progress, to provide support and to create opportunities to work as a team. Lecturers are also available in a consultant capacity. The last meeting in August is an evaluation session during which the students' performance is assessed and evaluated against the formulated educational goals. The supervisor and lecturer take joint responsibility in this regard.

Monitoring and feedback - Although some of the responsibilities are delegated to supervisors and co-ordinators, the Department remains accountable for the results. Staff at Unisa monitor the practical work reports which are supervised by the field instructor and provide feedback by way of correspondence, telephonically or personally. The aim is to provide a total learning experience in which all (ie instructors and lecturers) can share.

Provision of learning opportunities - Courses are provided on aspects of teaching, practice or theory in which supervisors request guidance or with new developments with which they wish to familiarize themselves. The benefits are that the supervisors can render more effective supervision and at the same time can improve their own practice. For the lecturers it provides an excellent opportunity to enhance their understanding of practice and the evolving contextual dilemmas practitioners face.

.3 Content of supervision

Supervision takes place after submission of the student's contact reports. It usually focusses on a critical analysis of the stu-

dent's activities. Questions are raised and avenues opened for the exploration of students' actions.

Within the broader context of the total curriculum and the specific goals of field instruction, the basic content of what is taught during supervision focusses on five areas namely the five P's (Perlman, 1957): **people** (which can be an individual, group, family or community); who have a **problem(s)** in social functioning; the **place** or agency where they apply for help; the **process** by which these clients are assisted; and the **personnel** (that is the social work student).

Attention is given to the objectives regarding knowledge, attitudes and skills of each of these content areas. Because the personality, skill and competence of the social worker is the main instrument in rendering assistance, the focus during supervision is especially directed on student growth and at developing a high level of self-awareness "so that she can act in a deliberate, disciplined, consciously directed manner in the client-worker interaction so as to be optimally helpful to the client" (Kadushin, 1985:170).

6. CONCLUSIONS

.1 A positive message

The Department of Social Work at Unisa accepted the challenge of providing part-time distance social work training, and has in the past years trained numerous social workers who otherwise would never have been in a position to further their studies.

Problems which stood in the way of providing effective social work education were overcome by creative inputs from the staff and welfare agencies and they are still exploring innovative possibilities.

The fact that Unisa's newly graduated students are keenly sought after by welfare agencies and the fact that many senior positions in

welfare agencies in South Africa are filled by Unisa's graduates are testimony to the effectiveness of the training.

.2 Factors contributing to success

The **first** priority in being able to arrange for and offer professional training such as Social Work, is the administrative support in having adequate **funds** and **staff**. The Department of Social Work has the goodwill and assistance of the Management of the University to provide for these. Staff provision is based on the staff formula for the human sciences. An 8% additional allowance on the total number of cost units is provided. This allowance is used for the appointment and remuneration of the co-ordinators and supervisors. Assistance is also given from the Dean's funds if required.

Secondly, an inordinate amount of planning, communication and administrative work is required in order to arrange for and offer field instruction for students and it requires the time, effort and commitment by education and practice. We can declare that education and practice meet these requirements.

A **third** priority is adequate and appropriate field placements and supervisors. This became possible with the establishment of student units. However, with the inception of student units, costs escalated and in spite of all the benefits derived from this arrangment, these additional costs will have to be taken into consideration when planning for extensions in this regard.

A **fourth** priority is dedicated staff who do not work from an ivory tower stance, but strive to constantly remain in touch with the needs of practice and learn from them. The Department of Social Work is fortunate in having the staff who meet this specification.

The Department of Social Work is justly proud of its model and regards it as a workable and effective way of teaching social work through distance education.

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BEYOND PROFESSIONAL TRAINING: DEVELOPING MENTAL HEALTH LEADERSHIP

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RADEMEYER: Gentlemen, I believe that we are facing a crisis in the field of mental health. I am not only referring to the magnitude of the problems that we are confronted with, but also to the implications that those problems have for the training of professionals. Now, I am sure that a lot of people would think that the way to tackle the problem would be to train better experts or more lower grade professionals.

LE ROUX: You are referring to the basic principle or belief system that more is necessarily better?

RADEMEYER: That is correct.

LE ROUX: The opposite of that would be that less could also be more, and this is also a matter that one can address!

RADEMEYER: My hunch is that the way to solve the problem would be to think anew about the implicit assumptions inherent in the solutions that are attempted. I think something can be said about how our solutions can become our problems.

SNYDERS: Yes, well, initially we attempted to cure the individual and we did not do a very good job of it; then we tried to prevent diseases from occurring. We did not manage that either, so now we realise that we have to empower the community or empower the system that we are dealing with, to heal themselves.

JORDAAN: I think that at least part of the problem pertains to the fact that we conceptualize mental health in individualistic terms. That is, we apply individualistic criteria in order to ascertain the extent of the individuals' mental health status. Does he feel that he is in control of his own life; does he manifest specific pathological attributes, etc. Your reference to empowering the community implies that we should view mental health in social terms.

RADEMEYER: So, I think we are going to contrast these two approaches or paradigms.

LE ROUX: On the one hand we can say that the individualistic approach did not get us very far, because we still have poverty, we still have crime. These problems are increasing daily. They persist. On the other hand, we can argue that it did get us somewhere, because medical science is improving, technology is improving, people are living longer, the quality of life is better.

RADEMEYER: I would like to take you to task on that one. Despite the fact that people live longer, I am of the opinion that they are creating more and more social problems... more and more psychological problems. It is like trying to dry the floor while the tap is still running. Despite our attempts to contain the problem, we are not succeeding.

JORDAAN: Are you saying that we have systematically underplayed the interconnectedness that exist between people? That the only way to cope with these problems, is to focus on the interconnectedness between people?

RADEMEYER: Yes. In fact I would like to argue that the basic problem with our attempted solutions at this point in time, is that we have been carried away by the traditional scientific way of thinking, which is a reductionistic way of thinking. We are used to chopping up reality into smaller and smaller bits and pieces in order to study it more forcefully and adequately. This way of thinking shines through our focussing on the individual each and every time. I believe that there has been a shift in scientific thinking in the last forty, fifty years. We have become aware of the fact that there are linkages. We need to be much more sensitive to the relationships between phenomena ... to the more holistic approach.

SNYDERS: For example, the behaviour of an individual does not make sense if you do not consider the context within which it occurs. If I can perhaps supply an example here: I would remind you of the work of Mony Elkaïm and his team in Brussels. Many of the children of Moroccan and Algerian families who emigrated to Brussels, became delinquent. So, they tackled the delinquency by doing psychotherapy with the individual delinquent or they chucked these individual delinquents into jail, but the problem just grew worse. Eventually Elkaïm and his team was consulted and they discovered some fascinating facts. For example, the fact that the children became delinquent, immediately brought the parents into direct contact with the Belgium authorities, the Belgium police, the courts, the schools, and so on. Obviously, these links did not exist when these families arrived in Brussels. So what they did was to familiarize new imigrant families with the legal system, the school system, and so on, as soon as they arrived in Belgium.

And strangely enough, the incidence of delinquency dropped dramatically.

RADEMEYER: You know, you are saying a very important thing. You are suggesting that the problem is not a product of the individual, but a product of the interplay of dynamics within a larger system, or systems.

JORDAAN: You are saying that behaviours are in a sense hanging together in interdependent fashion. What we have to do is to extract a pattern of inter-dependency?

LE ROUX: Yes. Dick Auerswald, with his so called ecological approach, did the same thing in Hawaii where they had a lot of violence amongst the youth. What he did was to ask each cultural group to discuss their problems and identity amongst themselves and then videotaped these discussions. He then played these recordings to all other groups, and this resulted in a dramatic decrease in violence. Now, I know that one can argue that this is nothing new - that we have done this type of thing all along and that we have been aware of the connectedness between people.

RADEMEYER: Whilst you were talking, I was thinking of the community mental health movement in the States. In the sixties, this movement developed rapidly. People were convinced that they had to treat the individual within the context of the community. But it did not really work, because despite the fact that they tried to solve the problem in a new way, they were still using old conceptual tools. They did little more than shifting the locality of

the mental hospital from outside the community to inside the community. They were not really thinking differently, it was just the venue that shifted.

SNYDERS: I think we can evaluate the activity of mental health multi-disciplinary teams in the same fashion. Instead of just the one professional working with the one client, we now have a whole team composed of various professionals working with one client and each purports to address a specific facet of the individual. In this sense the so called connectedness is just another way of splitting up the phenomenon we are dealing with.

LE ROUX: So, it is then much more than just interconnectedness that we are referring to? It is a radical different way of thinking... a radically different sort of cognitive map.

RADEMEYER: It is a very tricky concept, really, because it is not just a matter of bunching people together. It is a matter of becoming aware of the linkages between the behaviour, in the sense of getting a feel for the ecological hanging together of all the various behaviours and activities.

JORDAAN: Perhaps we need an example at this point. Let us take the case of a mother who complains about her son. Whenever he does not get his way, he gets extremely angry. An analysis of this situation may reveal the following pattern. Firstly, when the boy does not get his own way, his mother scolds him. Secondly, his grandmother intervenes and blames the mother for being too hard on the boy. She gives the boy some money to console him. Thirdly, the mother withdraws from the situation. Eventually the grandmother feels she cannot control the boy any more and then she blames the mother for not doing her duty as parent. Finally the mother takes over and the cycle of behaviours is

repeated again. Now, I think what we are saying is that the behaviour of any one member of the family is not possible without the behaviours of all the others. We cannot say that one incident causes the other in linear fashion. We have to look for the pattern and the pattern can only emerge from a holistic conception of the total situation.

RADEMEYER: It is almost as if you are saying that it is senseless to ask the question, which is first, the hen or the egg? We have hens, eggs, hens, eggs.

JORDAAN: And the pattern itself would be an emergent property of an analysis of the situation, but it cannot be located within separate slices of that situation.

SNYDERS: I have a question at this point. Are you then implying that UNISA can contribute towards the learning and teaching of mental health leaders by getting them to think wholistically - to think in patterns?

JORDAAN: As tutors, our main task is teaching. So, what should we do? I think that we require a body of knowledge which will enable students to become facilitators of networks in society. We should impart to them an interconnected body of knowledge instead of supplying them with chopped up bits of knowledge.

RADEMEYER: But you know, there might be a trap here; in terms of our alternative model the student should be empowered to make a contribution. I think it is incumbent on us to go about things in such a way that the student helps to teach us.

LE ROUX: Are you implying, that this is necessarily a better way of teaching as compared to what we have been doing up till now?

RADEMEYER: Personally I feel that it is better, in the sense that it actually empowers us to take a different tack with regard to solving mental health problems and training professionals. I think it is a better approach, because it is not a rigid approach. It does not have answers, but it can produce answers.

JORDAAN: One way of getting information from students that could be employed usefully in teaching is to pursue the notion of dialogical research, or partnership research. In dialogical research the traditional distinction between object and subject, that is the allness of the knower as opposed to the naiveness of the respondent falls away. Secondly, the idea of patternalism falls away. We are doing co-search, not research. And thirdly, truths or facts are not existing out there, but they are created in dialogue.

RADEMEYER: Can you possibly give us an example which will illustrate this?

JORDAAN: Yes. I read about research being done in the rural areas of Qwa-zulu. Now, when doing research we always explain to subjects that we will guarantee the confidentiality of their responses. In this specific situation, an interpreter, a researcher and a very poor farmer were discussing issues behind closed doors. The farmer asked why they had to do it in that way and the researcher explained that he was trying to ensure confidentiality. However, the farmer disapproved and insisted that in order to maintain confidentiality, they had to include his family and friends because they might discuss things that would have an effect on the total community. Total confidentiality therefore meant maximum openness. This was turning the idea of confidentiality upside down.

LE ROUX: The idea of collaboration is very different to our traditionally way of doing.

SNYDERS: Well, it is as if we are not working towards final answers, but towards construing a context of interdependency.

RADEMEYER: It suggests a deep respect for the ecological hanging together of phenomena.

JORDAAN: That would tend to bring another idea to the fore. If we put the emphasis on interconnectedness and networks, we are creating the idea of the network as a leader. How do you feel about this type of metaphor?

LE ROUX: It is very interesting, but I wonder whether it is not going to lead to a chaotic situation.

RADEMEYER: We might also argue that to stick with the traditional way of thinking, is indeed to create chaos. By relinquishing the leadership to the network and empowering the network to contribute we are actually making for less chaos, and that will be conducive to the development of mental health.

JORDAAN: We will maintain the integrity of the individual by maintaining his link with the network. To me, this is one of the most potent ways of reconceptualizing mental health.

RADEMEYER: I think we will still take note of individual problems, but we will actually regard them as productive nodal points in a larger network of linkages, which will give it a totally different meaning. Well, gentlemen, we finally have to consider the implications of what we have said for the training of professionals. The title of our presentation is "Beyond Professional Training: Developing Mental Health Leadership". I think that title reflects a lot of what we have been saying. The idea of professional training implies

that there are certain set ways which can be followed in dealing with problems and that the student has to be taught those. But that is part and parcel of the old conceptual package. If we think in terms of the alternative conceptual package, the emphasis is on educating students in the true sense of the word. What are the practical implications?

SNYDERS: In addition to what you have said before about educating students in holistic thinking, we will have to start shifting the boundaries between disciplines at the university; instead of teaching psychology students or sociology students or nursing students, will have to train a fairly flexible all rounder across these disciplines. If we do not transcend the boundaries, we are chopping up the ecology of knowledge.

JORDAAN: In a sense it is a restatement of the principle of interconnectedness. If this principle applies to a group of individuals, it surely must apply to a group of social science disciplines. Interconnectedness exists there too.

LE ROUX: Yes, and I think it makes for quite a challenge. We shall have to shift from a position of certainty to a position of uncertainty; but if we can live with a kind of an uncertain teaching situation, it might lead us into all kinds of interesting experiences.

JORDAAN: That is most likely going to create a problem. When one proposes a new course in terms of this new way of thinking, people would immediately ask about the kinds of solutions that it would create, as if what we propose would in fact guarantee solutions. What we are maintaining is that there are no final solutions, because it is an ongoing process.

RADEMEYER: So, one can create, or try to create the context within which creative active activities can burgeon. But that is not all one can do. It is almost as if I want to change the concept of input to that of wide-put. You have to expose a person to a tremendous variety of issues and hope that something will emerge out of it. I also think that in terms of regarding our professionals as leaders in the community, they will have this difficult task, this paradoxical task of being leaders without being leaders.

SNYDERS: They will have to contribute toward creating a context in which the network, or the system becomes the leader.

LE ROUX: In other words, one would have to trust the importance and the effects of collaboration, instead of going against it.

RADEMEYER: And this would imply that we do not have to fix what is out there but we can have faith that it will fix itself if we do not interfere with it too much.

LE ROUX: Right.

RADEMEYER: Thank you.

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TEACHING CATALOGUING AND CLASSIFICATION BY CORRESPONDENCE

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1. Introduction

This paper is on the method of teaching a subject with a large and important practical component to students who have to qualify for a specific profession in a situation where little, if any, face-to-face communication between teacher and student can take place. One discerns a problem with three facets:

- the problem of educating for a profession
- the problem of teaching at a distance
- the problem of teaching the subject itself, its nature and contents.

The subject in question is Cataloguing and Classification in the curriculum for Library and Information Science.

The paper will deal briefly with the first two facets in order to concentrate on the third. Before discussing the problems we have encountered in teaching Cataloguing and Classification here at Unisa, it will be necessary to explain what the subject comprises and what one's aim is in teaching it.

2. Professional education

At Unisa the Bachelor's degree in Librarianship - or Baccalaureus Bibliothecologiae (B.Bibl.) to use its official name - offers the prospective librarian and information worker the basic education he needs to become a practicing professional.

In any professional education the main problem is that at completion of his studies the entrant to the profession is expected to apply his newly-acquired knowledge in practice (Derr, 1980: 135). He must be able to perform profession-related tasks successfully. Preparing him for this inevitably

involves some training in these tasks. If the professional education is offered by a department of an academic institution like a university, or a professional school attached to such an institution, this element of task-training contributes to a state of tension between the objectives of a purely academic education on the one hand and the demands made by the profession on the other hand (Rayward, 1984: 151). This conflict can become severe enough to be disruptive in the case of a relatively new profession, which may not yet be perceived by 'outsiders' to be a profession. Library and Information Service is an example of an emerging profession that is still very concerned about its own public image (Wilkinson, 1983: 37). Consequently, its discipline, Library and Information Science, is not perceived (by itself) to be totally secure as an academic discipline.

The desire of librarianship educators at universities to justify their faculty status, but especially to ensure the academic standing of their courses can, and indeed have, resulted in a curtailment of training in professional tasks (Wilkinson, 1983: 37). Consequently, one finds that newly qualified librarians, for example cataloguing and classification librarians, still have to undergo extensive training at their places of employment before they become economically productive (Krieger, 1976: 177).

3. Distance education

In distance learning and teaching the first and foremost problem is the limitation of face-to-face communication between teacher and student (Chang, et al, 1983: 113). All other problems stem from this.

3.1 From the student's point of view:

He endures isolation from both his fellow-students and his teachers. The lack of constant communication with fellow-

students and teachers increases the likelihood of the student dropping behind in his studies (Chang, et al, 1983: 113).

The study program provided by the teacher should include pacing instructions which can help the student keep to a healthy progression in his studies, but it is up to himself to execute the program. If he lacks the self-discipline or strong motivation to do so, he may drop out altogether.

The very means of instruction that provide training in skills, and incidentally may also help to keep a student's interest in the subject alive (for example, demonstrations, discussion groups, practicals), are curtailed (Chang, et al, 1983: 113).

Even if a student is very self-disciplined and retains his motivation to keep at his studies, a study program that is limited to the promotion of written materials can result in the type of scholar who may be rich in knowledge but who lacks the means of making sensible use of his knowledge (Chang, et al, 1983: 114).

3.2 From the teacher's point of view:

The constraints of distance teaching are mainly due to the limitations of media that may readily be used at a distance. Yet in discussions of teaching effects in higher education, these effects have mainly been characterized in terms of teaching methods (Chang, et al, 1983: 20). Method and medium of instruction are of course interdependent - to such an extent that these terms are often used interchangeably (Chang, et al, 1983: 3). But, in view of the fact that one's choice of medium rather than one's choice of method is limited by the distance factor we should distinguish between method and medium. Briefly then: lectures can be seen as the traditional method used in conveying information to students. In a face-to-face situation lectures are spoken, so the medium of information transfer is speech. The lecture method can also be used in

distance education, where the medium of information transfer is words on paper. Other methods of instruction are, for instance, programmed instruction and its derivative behavioural instruction, computerized instruction, practical demonstration and self-study. Other media are, for instance, textbooks, television programs, soundrecordings, videos, computers and of course a teacher in person.

No one medium is tied solely to any one particular method. A particular method may use more than one medium and one of the media may be seen to be the principal one. The success of a particular method is very dependent on the particular medium or media used.

In distinguishing between method of instruction and medium of instruction, Chang et al point out that certain media are not readily applicable to certain instructional methods, for example, a practical demonstration can hardly be conveyed through a paper medium (Chang, et al, 1983: 20). To this one would like to add practical exercises that a student must actually do under guidance from his teacher in order to learn a skill. Having the student practice performing the skill is the best method to convey knowledge of skills because the student becomes knowledgeable by means of direct experience (Chang, et al, 1983: 30-31). One must ask the question: what principal medium of instruction other than a teacher in person is readily applicable to this method? Most teachers would agree that some sort of interactive teaching medium is essential if one wants a student to acquire some degree of proficiency in a skill. It would seem that in a situation where the teacher cannot be present in person, practical exercise as a teaching method is likely to fail. Yet, for more than twenty years Unisa has offered a course purporting to give librarianship students some training in practical cataloguing and classification.

4. The subject Cataloguing and Classification

For the B.Bibl. degree, Information Science is one of two three-course majors. The second level of Information Science is devoted to the study of Cataloguing and Classification.

4.1 Departmental aim

Generally speaking, our aim in this course is to acquaint students with principles involved and methods employed in the creation and optimal use of such conventional information retrieval devices that are normally found in libraries. More specifically stated: our first or primary aim is to equip students with the basic knowledge required to understand, evaluate and optimally use

(a) basic information storage and retrieval devices such as library catalogues, bibliographies and indexes using the author, title and subject approaches for storage and retrieval; and

(b) a library collection of documents* which is arranged in a classified subject order.

Our second aim stems from the above since we believe that such basic knowledge includes an acquaintance with the skills involved in applying

(a) a cataloguing code (rules) in order to construct the bibliographic records (that is, standardized descriptions of documents) that comprise a library catalogue or a bibliography;

(b) a thesaurus-like list of subject terms in order to provide verbal, alphabetical subject access to the catalogue's contents;

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*this term is henceforth used as a collective name for books (monographs), periodicals, pamphlets, soundrecordings, films and all other media containing potential information and that may be acquired by a library or information service.

(c) a bibliographic classification scheme in order to organize and arrange the library's collection of documents in classified subject order and to provide systematic or classified subject access to the catalogue's contents.

A student who has passed this course should be able to evaluate the conventional document retrieval methods and to undertake subject analysis, bibliographic organization and catalogue construction, initially under supervision of an experienced professional, in any library or information service.

This body of basic knowledge and skills about bibliographic organization and record keeping is divided into two study and examination modules called

(a) Theory of cataloguing and classification;

(b) Practical cataloguing and classification (Universiteit van Suid-Afrika, 1985: 30-31).

4.2 Subject content

The term 'cataloguing' refers to the collection of tasks involved in the construction and maintenance of a library catalogue. In narrower context it can mean just the creation of a bibliographic description of a document and the selection and formulation of headings under which copies of this bibliographic description will be filed. Bibliographic description and formulation of headings are done according to a code (that is, standardized rules), for example the Anglo-American cataloguing rules, 2nd edition (AACR2).

Librarians use the term classification with various meanings, namely

(a) to refer to the printed schedules of a bibliographic classification scheme (for example the Dewey Decimal Classification) according to which documents as well as catalogue entries for them are arranged in a systematic subject order; and

(b) to refer to the act of

- deciding what the subject matter of a document is; then
- assigning a notation (symbol) denoting that subject matter; then
- placing the documents (also the catalogue entries for them) in the order prescribed by such schedules.

4.2.1 Theory of cataloguing and classification

What we call theory of cataloguing and classification is not theory in the strict scientific sense of the word. About a third of the contents of theory of classification constitutes an "applied theory" (Derr, 1983: 198), since concepts from other older disciplines like Logic are used to explain certain principles of construction of a bibliographic classification scheme. But, the rest of classification theory and all of cataloguing theory consist of descriptive knowledge about what catalogue and classification librarians are concerned with, why they should be concerned with it, what the ideals are in respect of the systematic organization and recording of a library's collection of documents and an account of certain significant developments in this field. Thus, in cataloguing theory we pay attention especially to the development of centralized and cooperative cataloguing practices which, with the application and development of sophisticated computer technology in the last 20 to 30 years, have evolved into computer-based networks that work with large bibliographic databases containing millions of bibliographic records. Such records were originally created by cataloguers as catalogue entries. This development has lifted the work of the cataloguer out of a localized setting into the international sphere and has affirmed the long-felt desirability, now an absolute necessity, of creating bibliographic descriptions according to cataloguing rules codified according to internationally accepted principles.

Classification theory (at any rate, that part of it that can be taught to students at the second level of tertiary education) has not undergone similar dynamic development. The subject content is basically the same as it was 40/50 years ago, with the addition nowadays of knowledge about some experimental work in automatic classification and artificial intelligence. In our course, however, we cannot pay much attention to the latter. The relevance of classification teaching has remained tied to the needs of a library where the collection of documents is systematically arranged by subject, the subject matter being represented by a notation derived from a specific bibliographic classification scheme, for example the Dewey Decimal Classification. The use of classification notations is regarded as only one of the various indexing methods used for subject access to the document surrogates (the bibliographic descriptions) in catalogues and bibliographies. At the present time the preference is for subject access and retrieval by means of natural language indexing terms or subject terms derived from thesauri. However, we expect our students to be able to compare the effectiveness of the various subject indexing (including classification) systems.

4.2.2 Practical cataloguing and classification

For practical cataloguing the students are taught how to

(a) study and apply the cataloguing code (AACR2) to the steps of the cataloguing process

- examining a document to identify the data elements to be included in its bibliographic description
- constructing bibliographic descriptions for books (monographs), periodicals (serials) and a selection of other media
- determining the headings (access points) where copies of a bibliographic description will be retrievable
- compiling an in-house authority file;

(b) apply a list of computer-readable codes (selected by the tutor from the SAMARC manual) in coding a bibliographic description for input, in off-line mode, to a computerized catalogue system;

(c) study and apply a published list of subject headings in compiling an alphabetical subject catalogue;

(d) compile a systematic (classified order) subject catalogue.

In practical classification students are taught how to

(a) determine the subject matter of a document; and

(b) study and apply the latest edition of the DDC in deriving notations that will represent the subject matter of a document.

By completing a program of assignments students get experience in actually doing these tasks.

4.2.3 Method of tuition

Communication between tutor and student is by means of the written word mostly: study guides, tutorial letters, prescribed textbooks, other recommended texts to be consulted for the assignments, comments written on students' assignment answers, private letters in reply to students' queries. Direct, spoken communication occurs in organized discussion classes twice a year, by telephone and person-to-person when individual students make appointments to see a tutor.

For the theory paper six assignments (self-study tasks) on selected topics are set. Two of these are in the form of multiple-choice answers to questions. For the others, answers are required in essay form or in briefer, explanatory notes in answer to a set of short questions. For successful completion of assignments students should read/study/take notes from study guides, prescribed textbooks and other specified recommended literature. Students are urged to read for each of the assignments but need to submit only two for evaluation (and pass them)

or three if they did both multiple-choice type assignments.

For the practical paper essentially the same communication methods as specified above are used. At discussion classes transparencies are used to illustrate important points and examples, and students are given practical guidance in using the AACR2 and DDC. A demonstration of online catalogue input and some hands-on experience at input are being planned for when funds are made available to buy the necessary computer software tutors need for this.

Assignments for practical cataloguing contain about ten examples each. An example consists of a simulated title-page and additional notes about the item in the case of a book or a periodical and a description of the item in the case of other media. For each item the student must construct a bibliographic description at the AACR2's second level standard, select relevant access points at which the bibliographic description will be retrievable from a catalogue or database, and assign the correct form of name/title/subject term to each access point. For one set of assignments the student must also assign verbal subject headings, selected from Sears' list of subject headings, to each example.

Assignments for practical classification contain about 20 examples each. An example consists of a title of a document and additional statements about it to help the student to determine the document's subject matter. The student must use the DDC to assign a notation to each example.

All the practical assignments are issued in pairs - four pairs for cataloguing and four pairs for classification. Each pair consists of a trial-run assignment and a test assignment that covers the same field of study as its preceding trial-run. Each trial-run is accompanied by the tutor's "model answer" to it. The model answer consists of the correct solution and detailed explanations of how the student should have obtained

the answer to each example. In compiling such an explanatory model answer the tutor tries to anticipate the mistakes the student might make.

The student is instructed to

1. first study the guidance and explanations given in the study guide;
2. then, work out the examples in the trial-run himself;
3. then, mark his own work by comparing it closely with the tutor's answer;
4. consider why he went wrong in some places and do remedial studying. Only after he has satisfied himself that he understands why he had erred in his own answer (that is, if he had erred), should the student work out the test assignment, which must be submitted to the tutor for evaluation. The tutor then returns her own model answer with each marked and graded test assignment, with her comments on any mistakes made by the individual student. Teaching and evaluation of a student's progress occur up to more or less 6 weeks before the final examination in October.

To gain admission to the examination in practical cataloguing and classification a student has to submit and obtain a pass mark for at least four test assignments (two for cataloguing and two for classification). However, students are urged to do all the trial-runs and all the test assignments, since the more practice a person gets at these skills the more proficient he becomes.

4.2.3.1 Comparison with previous method of tuition: The tuition method just described differs slightly from what was offered to students previously. One sincerely believes that the present method is an improvement from the student's point of view.

When writer joined this Department in 1971 as a teacher of cataloguing, tuition was offered, like it is nowadays, by means of a study guide, tutorial letters containing instructions to the students and a series of assignments containing examples to be catalogued and another series of assignments containing examples to be classified. One examination paper was devoted to cataloguing and another to classification. In those days twelve assignments were set for each paper, that is twentyfour assignments in all. The tutor prepared a model answer for each assignment and despatched it with the student's marked and graded assignment, but students who had not submitted assignments also received the tutor's answer. This practice resulted in a situation where Unisa's model answers for practical cataloguing and classification assignments became "gems" passed from student to student, from year to year. A tutor had to either set twelve fresh assignments (each containing ten cataloguing examples) each year or face the certainty of receiving students' answers containing perfectly copied tutors' solutions from previous years, warts and all. Only teachers of practical cataloguing can fully appreciate how difficult and time-consuming it is to search for meaningful cataloguing examples that afford one the opportunity of demonstrating the use of different sets of cataloguing rules.

Writer then devised the plan of selecting the best from all the "old and used" examples and grouping them into trial-run assignments for which the student receives, at the outset, an explanatory model answer. The existing answers to the "old and used" examples were augmented with additional explanations that turned these trial-runs plus their answers into demonstration models. The examples for the test assignments are selected afresh every year with the purpose of testing the student's understanding of the tuition offered in the study guide and the series of trial-run assignments plus their

explanatory model answers.

The present system was adopted for practical cataloguing in 1973. Although a similar problem (of old model answers circulating amongst students) existed in respect of practical classification, the problem was less acute for the colleague who handled that paper during the 1970s and who continued with the old system.

Very much encouraged by appreciative comments from students about the system that was in use for practical cataloguing, also by a perceived improvement in students' performance, the system of "trial-run followed by a test" was introduced in respect of practical classification in 1980. We continue to receive appreciative feedback from students; although they generally complain bitterly about the amount of work and particularly the time consumed by it.

5. Problems and criticism

The following problems and criticisms of the existing course content or tuition method have been identified. If time permits during delivery of the paper, writer would like to discuss one or all of them in more detail.

1. The teaching of the principles of classification and meaningful application of a bibliographic classification scheme presupposes that a student has the educational, linguistic and cultural background to understand how various subject disciplines or fields of study developed and relate to each other. If a student lacks this background he should be able to acquire such knowledge readily through informal study. This is, one believes, a world-wide problem that is quite acute in South Africa's multi-cultural and multi-lingual society.

2. Studying for this course in the step-by-step manner prescribed by the teachers is a very time-consuming activity. This is a perennial complaint of students. Yet, if a student should attempt a short-cut it is immediately revealed by an increase in errors. For the teachers it is equally time-consuming. During those months of the year that most Unisa lecturers experience a lull in their tutorial duties and consequently devote their time to research with a view to improving their academic qualifications or merely to publish, the lecturers in cataloguing and classification are busy preparing the next academic year's complement of tutorial letters. Meaningful cataloguing and classification examples must be selected with care, which can mean spending days amongst the bookshelves in the library. Then the teacher's answers to assignments must be worked out in detail, error-free, with anticipation of likely mistakes by students so that these can be explained.
3. Most students have to work in isolation. Although this might not be a drawback for many librarianship students, a system of small groups of individuals working together informally is more suitable for practical cataloguing and classification. Teachers also tend to become isolated unless a concerted effort is made to be informed about new developments in library practice.
4. Teachers of practical cataloguing and classification are mostly recruited from the ranks of practising librarians. This is a good thing because one cannot be a successful teacher if one has only a little or no practical experience. But people with a pragmatic outlook may not adapt easily or quickly to the demands of the academic world.
5. A serious criticism that can be levelled at this course is the lack of computer expertise. The computerization of the cataloguing process has long since developed into online

cataloguing systems with online public access catalogues. Teaching students how such systems operate in the theoretical part of the course as we do, is not sufficient. Unless a student is given the opportunity to get hands-on experience at both the input and the retrieval of bibliographic data, his education is incomplete. The ideal manner in which to learn about catalogues and cataloguing nowadays and for the year 2000, is at a computer programmed to teach the subject interactively, the computer program, although originally written by the teacher, now replacing the teacher - thus relieving him of the drudgery of routine teaching to spend more time on devising new teaching programs.

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THE PRACTICAL COMPONENT IN THE EDUCATION PROGRAMME OF STUDENTS IN LIBRARY AND INFORMATION SCIENCE AT UNISA

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University of South Africa

Introduction

Before discussing fieldwork or practicum in the education programme of students in Library and Information Science, it is necessary to define this concept. Fieldwork is a professionally supervised library experience which takes place in the practical situation, during the academic study period, and is comparable to unpaid student teaching during the teachers' training period. (Witucke 1976:163)

The theory of library and information science to date has not provided suitable guidelines, that are generally acceptable for the appropriate linking of the practical experience with the theoretical educational programme. It seems as if fieldwork is not regarded as an integral part of library and information science training, but rather as a separate, but sometimes necessary, addition. (Van Brakel 1982:140) The educational aims of fieldwork in the training of library and information workers, generally speaking, are not agreed upon by the educationalists and a systematic evaluation is not possible at present. (Pryterch 1982:173)

Education for librarianship has frequently been a whipping boy, used by practitioners to help account for the failure of librarians to make successful adaptations to change. These librarians expect that newly qualified librarians should come fully prepared, able to meet all these new adaptations and challenges to which they themselves cannot adapt. (Dougherty & Longee 1983:1322-1323)

In the late nineteenth century the importance of fieldwork was seen by pioneer library educators, so experience in the form of fieldwork was regarded as a major part of the education of librarians. In the early twentieth century this attitude started changing to an increasingly academic and theoretical preparation for librarianship. (Witucke 1976:162)

Up to the 1940's fieldwork was still required fairly generally, but after World War II there was a definite swing away from practical work (Grogan 1983:13) and the unanimity began to crack and only a small percentage of library science educational programmes required fieldwork. This trend away from compulsory fieldwork, to a certain extent, still continues to this day.

There were a number of reasons for this opinion shift, e.g.

- the need to make the most of the limited time spent in library school
- administrative difficulties in executing practical experience programmes
- the lack of conviction that fieldwork is a useful learning method
- the concern for the professional status of librarians and information workers, as practical work smacked of an apprenticeship in skills and thus unsuitable for academic status. (Witucke 1976:162-163)

In South Africa the Diploma in Librarianship, offered by the South African Library Association carried the practical component as part of the curriculum to 1962 when this course was discontinued, and the universities finally took over the education for librarianship and information science.

The general pattern of fieldwork in education for librarianship went through three major phases:

- fieldwork was part of the core course
- availability of a fieldwork component was limited
- fieldwork was available only as an option under given conditions. (Witucke 1976:163)

By the middle of the twentieth century, doubts were raised again that there probably was too little training in techniques. The trend of academic library school courses was towards purely academic, theoretical teaching, which had become too divorced from the practical situation. A better balance between theory and practice was needed.

In the 1970's a renewed interest in fieldwork took place. Once again it was felt that it is essential to include a fieldwork component in librarianship and information science training. (Viljoen 1976:142)

Objectives of fieldwork in the training of librarians and information workers

According to R R Felton (1985:119) the primary objective for including fieldwork in library and information science courses, is to expose the students to the realities of practical service and user groups. Conant (Grogan 1983:13) on the other hand stated that previous experience in a library, even at professional level, cannot be considered an adequate substitute for the study of principles and theories in juxta position, for practical experience in which the principles and theory both are applied.

Viljoen (1976:145-146) goes even further when he states that the foundation of the students and their development as scientific professional persons, is of primary importance, but it is also the task of professional education to include the specialized knowledge which distinguishes one profession from all other professions. When the students have gained some knowledge by means of the fieldwork during their course, the practice can build on this and so form professional workers who can reconcile theory and practice.

The general objectives of fieldwork are, inter alia

- students can apply to the practical situation what they have learned in the course

- they can enrich and extend their outlook and opinions and gain more self-assurance. (Viljoen 1976:148)

On an even more personal level, for students to be able to work side-by-side with professionals will give them a chance to see how theory may have to be modified in practice, and will also, to a certain extent, enable them to assess their own suitability for the profession.

Advantages and disadvantages of fieldwork

No really systematic attempt has been made to evaluate the advantages and disadvantages of fieldwork as part of the academic training of librarians. However, there are certain general advantages and disadvantages that emerge when reading the literature on fieldwork in the education of library and information workers.

Some of the general advantages are:

- students can relate theory and practice
- the reality of the situation in libraries and information services is brought home to students
- students have to apply their learning skills
- fieldwork develops competence and judgement
- course work is enhanced by this individualized study programme

Some general disadvantages are:

- many administrative and practical problems in the placing and acceptance of students for fieldwork, particularly in the distance education situation in South Africa
- there is often a shortage of approved library and information services in which to place students
- the lack of control by the staff members in cooperating libraries due to their other duties. This can lead to a heavy emphasis on clerical routines
- the lack of control by tutors, particularly in the distance education situation.

Margaret Monroe offered a current rationale for incorporating fieldwork in the library science curriculum that concisely expresses the general trend among the various authors, namely that fieldwork not only provides a bridge between theory and practice, but adds sophistication to the students' awareness of the work environment; and develops sensitivity to personal relations with staff, supervisors and users of the library. (Grogan 1983:16-17)

Alternatives to fieldwork

There are a few alternatives to fieldwork. Unfortunately most of these are not viable in the distance education situation. Alternatives include:

- previous library experience that can be an acceptable alternative in both residential and distance education situations. The acceptance of such experience depends on the length, quality and currency of the experience. Purely non-professional work is not acceptable. This type of fieldwork can be monitored in most situations.
- library visits or study tours can provide observation of routines and services, as well as discussions with professional staff, but cannot provide hands-on experience. In distance teaching this alternative cannot be accepted as the tutors cannot monitor students' visits.
- library laboratories and teaching libraries are suitable for residential education institutions, but not for distance education. It would be impossible to provide such facilities to the scattered student body. Unisa with its world-wide student body could not even consider such a service.
- internship is another alternative to fieldwork and consists of supervised library experience on a professional level, following on completion of a library school course. This can be compared with e.g. a medical internship, and would carry a

salary. (Witucke 1976:168) For the library and information service this costs the management time and money with no evident benefits. (Dougherty & Longee 1983:1324) However, for the student it could provide many benefits, e.g. rounding off professional education, stimulating professional growth and learning procedures.

The South African Library Association (SALA), forerunner of the South African Institute for Librarianship and Information Science (SAILIS) had a system of this kind. Up to the early 1960's SALA offered a Diploma in Librarianship by correspondence. All students had to be employed in an approved library for three years before the Diploma was awarded, so this could be looked upon as an internment.

Some library schools, for instance at the University of Welllington in New Zealand, offer fieldwork during their course as an option to the writing of certain examination papers. This option has proved a success as many students react favourably to chances for extending their education beyond the classroom. (Fenton 1985:120)

In distance education a variety of teaching methods or techniques that simulate the practical situation, can be utilized, for instance case studies; in-tray exercises; management games and role-playing. The drawback for the students at distance education institutions, is that they have to do these exercises in isolation (even if TV, videos etc. are available), without feedback. Such exercises will always be unreal in comparison to a satisfactory period of supervised work experience.

When fieldwork should take place, and the type of experience needed

Fieldwork is based on educational principles, so it is the library school that has to plan the fieldwork and must control it. Fieldwork by students must not take place too early in their

library and information science course, as they would not really benefit from the work at a too early stage. Unless students have mastered the theory underlying the fieldwork, they will not be able to perform certain of the stipulated duties, i.e. students should have reached a certain level of expertise which includes cataloguing and classification. (Van Brakel 1982:144) The fieldwork given to the students by the host library should be sufficiently varied to give them a good overview of the library's organization and administration. The library school must state precisely what is required of the student while working in the host library.

Tutors have to liaise with the host libraries regarding fieldwork. The librarians must receive details of the aims of this exercise and of the various fields the students have to cover in their fieldwork. The students on the other hand must know exactly what is expected of them and what they can expect from the library in which they will do their fieldwork. It is essential that the relationship between the library and information services and the library school, should be cordial.

Control of the fieldwork

Fieldwork needs to be strictly controlled if it is to be worthwhile. This is possible in residential library schools, as the student numbers are manageable and the tutors usually can visit the host libraries while the students are working there. They can observe whether the students have reached the required level of expertise needed for their reports, which have to analyse the experience they acquired, as well as give an overview of the library functions. The host library needs to have a well worked out programme for the fieldwork, and accordingly an evaluation of the students.

In South Africa at present fieldwork is regarded as a valuable part of the programme for library and information science

education. Most universities insist on practical experience before completion of students' studies, unless the students have acceptable recent experience. Fieldwork has to be done in credited libraries, under supervision of qualified librarians. After completing their fieldwork, students are expected to

- understand and apply their theoretical knowledge in a practical situation
- analyse their own professional skills and test them in the light of the fieldwork experience
- acquire self-knowledge and attain their own professional identity

There are various library schools in South Africa, most of which are attached to residential universities, offering full-time or extra-mural courses. The technikons are beginning to offer courses on a more practical level, geared for semi-professional qualifications.

Distance education and fieldwork

Unisa's library school is purely a distance education facility and is the largest in South Africa. Distance teaching causes many problems, including the problems of fieldwork for students while studying. One of the basic problems Unisa faces when placing students for fieldwork is the impossibility of observing students during their fieldwork. The students are scattered, not only in South Africa, or even Africa, but also in many other countries as well, so the number of registrations as well as geographic factors make individual attention impossible. The only way to access their fieldwork is by means of written reports by the students and the host librarians.

Sometimes there is a shortage of suitable library or information services in which students can work. Individual libraries can only take limited numbers of students as they disrupt the work in these libraries. In spite of this, the libraries are

very cooperative, as they realize that it is in their own interest to assist students in gaining some knowledge of the practical situation before completing their studies.

In South Africa the majority of public libraries are affiliated to the Provincial Library Services. Many library functions are the responsibility of the central organization in each Province, with the result that the individual libraries receive pre-selected, catalogued and classified books and other media, as well as a central inter-library loan service. These libraries have a certain amount of freedom within this set-up, but that does not take away from the fact that a student cannot gain much practical experience in these affiliated public libraries. This limits the number of libraries still further.

In the special library field many of the libraries are small without qualified librarians in charge, usually making them unsuitable.

University libraries are excellent for fieldwork, as they have all the resources needed for such work, but there are less than twenty such libraries, and universities with their own library schools will obviously favour their own students.

In spite of all this, Unisa's Library and Information Science Department manages to keep up the fieldwork for the Library Science degree course.

The school library course, also offered in the Department, is in a better position, as these future teacher-librarians have many schools with good media centres in which to do their fieldwork.

Based on the Guidelines for fieldwork published by SAILIS in 1984, the Department annually compiles a tutorial letter on fieldwork which is sent to all the students registered for the Library Science I, II and III courses. Library Science I and Information Services I are the basic courses for the B.Bibl. degree, as well as for the Diploma in School Library Science.

This tutorial letter, inter alia indicates that students cannot sit for the Library Science III examinations unless they have done the required four week period of fieldwork (or its equivalent). The B.Bibl. degree will not be conferred unless a satisfactory report on the fieldwork is submitted as Assignment 01 for the Library Science III course.

Exemption from the above rulings will be granted only under special circumstance such as students who cannot undertake such work by force of circumstances, e.g. prisoners, national servicemen and badly handicapped students, as well as students registered for non-degree purposes or continuing education.

The Department stipulates that fieldwork be done after passing Library Science I and Information Science I and that students must be registered for Library Science II and Information Science II or else also have completed these two courses. The fieldwork must be completed before July of the year in which students registered for Library Science III, and a satisfactory report must be submitted before 31st July.

The Department has a set procedure to be followed when applying to do fieldwork. Students must submit their application for fieldwork before April and must personally approach the library or information service of their choice. After this an application form for approval of the institution chosen must be submitted to the Department. This form includes details on the students, e.g. the stage reached in their studies, the name of the chosen institution, the contact person, the period proposed for the fieldwork and any other additional information.

If the Department approves of the library/information service, the students receive a confirmation letter. A progress record is then opened for each student, and an explanation of the background and regulations of the fieldwork system and a full exposition of what is expected of students is sent to the library/-information service. The five areas of fieldwork that have to be

covered are listed, including the processes the student has to observe and the hands-on experience needed.

After the submitted report has been assessed by the tutor, a form is completed containing comments, percentage and examination credit point awarded, which then is added to the students' records.

A thank you letter is sent to each host library or information service.

Control of fieldwork

In the distance education situation the control the tutor has over the fieldwork and the writing of the report obviously is minimal. (Prytherch 1982:178-179) Because of this there are problems to overcome, e.g.

- the need of sometimes having to use libraries that are not very satisfactory
- host libraries may force their own interpretations on students, preventing them from forming their own opinions
- the duration (4 weeks) may be too long or too short, depending on the size of the library
- the lack of supervision and observation by the tutor can result in misconceptions.

However, the control and evaluation that the tutor can manage under the circumstances, can still determine and improve the effectiveness of fieldwork. This is possible with a well thought out programme, which rests on the shoulders of the educational body, by means of the tutors who must also have the necessary initiative to make improvements where possible.

Conclusion

The need for fieldwork performed simultaneously with undergraduate studies has been emphasized; the obligation of library schools to provide their students with the opportunity to analyse problems, and at the same time learn to find solutions

for practical problems, have been evaluated, proving that the problems encountered in distance teaching by the inclusion of fieldwork in the curriculum, are not unsurmountable. It has been indicated that Unisa's Department of Library and Information Science has achieved a good system which is working well.

Very few complaints have been received from the students and the host libraries have cooperated very well.

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Dear

BIB301-F : FIELDWORK

According to the new B.Bibl. structure, you are required to do 4 weeks fieldwork in a library and information service that has been approved by the Department of Library and Information Science at Unisa.

In order for the department to determine if the library and information service where you are intending to do your fieldwork is acceptable, you must complete the application form on p. 6 of your Tutorial letter BIB300-E/301/1987 and submit it to the department before 10 April, 1987.

We wish you an enjoyable and fruitful period of fieldwork.

Yours sincerely,

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Dear

BIB301-F : Fieldwork

Thank you for your application to undertake fieldwork in the Library. Your application is approved, and we wish you a useful and enjoyable period of fieldwork. We trust that you have studied the tutorial letter setting out the purpose of fieldwork carefully, as well as the requirements for the report. We will be in contact with in support of your application and to explain the purpose and requirements of your fieldwork. Although you work full time at the Library, you must still study the various procedures in the library and comment on them. You will have to arrange with the head of your section to work in the various sections and discuss relevant aspects with other staff members.

Wishing you a succesful study year,

Sincerely

Dear

BIB301 : Fieldwork

Thank you for your letter of in which you apply for exemption from fieldwork.

We cannot grant exemption from the requirement for fieldwork even though you are and have been employed in a large library. The reason is that you are required to study and report on library functions in the light of your studies. Reporting on those areas with which you are familiar should therefore be easy. Of great value to you is the study of procedures you do not normally come into contact with.

I nevertheless want to confirm that you are still required to submit a report on library functions (i.e. assignment 01). In order to compile the report you should study functions in the different sections of the library and comment on them as set out in Tutorial letter BIB300-E/301/87, p. 9-11. Your approach should therefore be descriptive as well as analytical. By studying policies and methods descriptively, analytically and evaluatively you can gain much enriching experience, applicable to your own work situation.

I trust that the whole matter of your report on your fieldwork will be clear to you.

Yours sincerely,

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Dear

We have again arrived at the end of an academic year in which you have also participated. We would like to take this opportunity to express our sincere thanks and appreciation for your willing readiness to help and guide our students during their period of fieldwork in your library and information service.

We are aware that the fieldwork component requires a great deal of time and attention from you and your personnel. We would therefore appreciate it if you would convey our thanks to your personnel.

We trust that in the future your expertise and facilities will be available to our students doing their fieldwork. The Department of Library and Information Science at Unisa places a high value on the contact and cooperation between the department and the practice and thus has a particular appreciation of your participation.

Yours sincerely

R.B. Zaaiman
Professor and Head
Department of Library and Information Science

BIB301-F : WERKOPDRAG 01 : PRAKTYKERVARING : VERSLAG
ASSIGNMENT 01 : FIELDWORK : REPORT

NAAM VAN STUDENT
NAME OF STUDENT : _____

BIBLIOTEEK- EN INLIGTINGSDIENS
LIBRARY AND INFORMATION SERVICE : _____

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WERKOPDRAG ASSIGNMENT	DATUM DATE	PUNTE MARKS	TOELATINGSKREDIET ADMISSION CREDIT

KOMMENTAAR
COMMENT : _____

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SIGNATURE OF LECTURER : _____ DATUM
DATE : _____

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3229*

THE CONTRIBUTION OF DISTANCE EDUCATION TO THE DEVELOPMENT OF THE NURSING PROFESSION IN SOUTHERN AFRICA

by

CHARLOTTE SEARLE AND HILLA I.L. BRINK

INTRODUCTION

Prior to the outbreak of World War II (1939 - 1945) Southern Africa was primarily a rural community with a low level of industrial development. Only 38.4 percent of the population lived in urban communities. The overall population density was 24.2 per square mile (Union statistics 1910 - 1960 : A - 10 and A - 11).

Secondary school facilities providing education up to Senior Certificate (12th grade level) were only located in the major urban areas. The majority of pupils consequently left school with less than full secondary or even intermediate secondary education. (Reports of the Provincial Departments of Education 1928 - 1938 and Behr 1966 : 131.)

During World War II large scale industrial development began. This resulted in a 6 percent rural - urban shift of population in a six year period. (Union Statistics 1910 - 1960 : A - 10.) By the end of the War the health services which had been designed for a predominantly agrarian society were unable to cope with the health needs of a fast-developing industrialised society. Expansion of health services received priority attention. However, health services need nurses. The expansion of health care facilities and the rapid developments in medical science and technology created an unprecedented demand for registered nurses. Nursing Colleges were established, extremely generous financing of nursing education was provided; but the general education system of the country could not produce the number of recruits with senior or even intermediate high school education that were required to meet the nursing needs of the nation. At the same time the industrialisation programmes and the acceleration in the training of teachers opened up a great variety of career opportunities for persons holding the senior secondary school certificate (12th grade).

Nurse leaders realised that the normal general secondary education system could not provide the number of recruits with senior certificate that the profession needed so urgently. They turned to correspondence schools to help solve the problem. At the same time they launched an ongoing campaign to bring to the attention of early school leavers that they could obtain the necessary educational qualifications for admission to nursing schools through studying by correspondence. In this way the leaders hoped to double the intake of nursing students within a ten year period.

This they succeeded in doing. The correspondence schools made a vital contribution to the development of the nursing profession in the early post-war years until the secondary school system could meet the normal growth needs in the profession. Even now a steady number of recruits enter the professional nursing course with a senior certificate obtained by correspondence study. Such students are generally persons climbing the career ladder from being enrolled nurses (i.e. an auxiliary category of nurse) to becoming professional nurses. Many professional nurses take subjects through the correspondence schools to improve the quality of their senior certificates so that they can obtain unconditional matriculation status for study at University.

Without the contribution made by the correspondence schools the nursing profession in South Africa would not have managed to increase its numbers from 18 686 registered nurses and midwives in 1948 (S.A.N.C. Statistical Records 1944 - 1960) to 64 917 registered nurses and midwives and 23 924 enrolled nurses (S.A.N.C. Records C2/M87(b) and C12/M87(B)) for 1986.

An added advantage that accrued to nursing was the fact that the early school-leaver who acquired the secondary or intermediate secondary qualification the hard way by correspondence came into the nursing system with initiative, drive and the ability to profit by self-directed learning, as well as with the determination to stay the course. These are valuable assets on any nursing course.

Whilst the development of the secondary education system in South Africa has now made reliance by the nursing schools on the system of distance education to augment student intake unneccessary, there will always be a percentage of students who enter the nursing schools with this type of upper level secondary education. The vast distances and socio-economic status of many citizens make this inevitable.

DISTANCE EDUCATION AND THE PRODUCTION OF SENIOR NURSING PERSONNEL

By 1950 the rapid expansion of the health services demanded new levels of expertise in nursing administration, nursing education and community health care. There was a clamant need for research in nursing and for the development of local nursing literature. Such development required study beyond the level of a three year diploma in nursing science. Three universities had introduced one year courses for nurse educators. While these courses met the most urgent needs in nursing education as an interim measure, the need for a cadre of nurses with at least baccalaureate degrees became acute.

There were no nursing degrees in South Africa at that time. The first basic degree course in nursing admitted its first students in 1956. Only one university was involved at this stage. It would take years before graduate personnel with sufficient expertise could emerge from the degree course to meet the urgent need for the services of leaders in nursing in a variety of fields.

In the absence of post-registration nursing degrees in the functional areas of nursing, young registered nurses with a few years of post-registration clinical, administrative or teaching experience behind them, were influenced to enrol in extra-mural classes at residential universities with a view to reading for a bachelor's degree in the social sciences. Only nurses resident in large urban areas could benefit from this.

The majority of nurses who had the potential to follow degrees of this type were denied the opportunity of studying at the residential universities either as internal or extra-mural students. The distances were too great to enable them to do so, and the cost in terms of family and financial obligations were too high. At that time approximately 65 percent of the registered nurses were married with home and family obligations.

With the establishment of the University of South Africa as a distance teaching institution, registered nurses were urged to enrol for baccalaureus degrees. This they did primarily in the social sciences. It appears that approximately 106 registered nurses acquired BA degrees in this way (Brownlee 1982 : 378). Among this group were outstanding young leaders who made an almost unbelievable impact on the development of nursing services and nursing education. Their contribution highlighted the need for a substantial number of nurses to hold degrees, and in particular post-graduate degrees. Without the contribution of these nurses the development in nursing education which were envisaged by the nursing profession and by the health care

authorities would not have been possible for many decades. They opened up the way for the appointment of nurses to top executive

positions in the health care industry and high academic positions in the tertiary education system. From their ranks emerged the first nurse in South Africa to obtain a Ph.D., and subsequently the first professor in nursing science in this country.

Above all their contribution to the development of the health services was so great that a demand for nurses with degrees was created.

Through their contribution in the period of twenty years between 1955 and 1975, no less than eleven South African universities introduced nursing degrees at baccalaureus, masters and doctoral levels and personnel were being prepared for a further four nursing science departments in Southern Africa universities.

This group of Unisa graduates with non-nursing degrees were convincing advocates for the nursing profession. In addition to the development of nursing education at University level throughout South Africa, they gave support to the concept that certain types of nursing education at degree level could be given through distance education. They repeatedly emphasised the need for such development. However, health service authorities and nursing personnel in particular are very conservative. The first move towards instituting degrees through distance education was made in 1947, but the profession rejected this concept. In the meantime the growth in the development of health

services led to an increasing shortage of nurse administrators, nurse educators and well prepared community health nurses. The obvious answer was to introduce post-registration nursing degrees through UNISA, but the nursing profession resisted this. The belief was current that one could only learn in a fact-to-face classroom situation. As some senior members of the profession felt threatened by those nurses who had taken non-nursing degrees through Unisa, they were loud in their condemnation of the proposal to institute post-registration nursing degrees through distance education. The matter was eventually taken up by the South African Nursing Association, and at a nursing congress in 1972 the Unisa graduates won the day with a majority vote of 1 (S.A.N.A. Biennial Congress records 1972), deciding to ask Unisa to institute nursing degrees through distance education. It took another three years before the proposal could be implemented. Without the strong support of the Rector of the University of South Africa, Prof. T. van Wyk, it could have taken a far longer time to do so.

NURSING DEGREES INTRODUCED AT A DISTANCE EDUCATION UNIVERSITY

In 1975 the University of South Africa introduced a two year Diploma in Advanced Nursing Science, a three year post-registration degree, an Honours, a Masters and a doctoral degree.

There was uncertainty that these courses would be viable. However, the need of the nursing profession was so great that 701 students registered in the first year (1976). Ten years later the registrations in the undergraduate course totalled 4 751, a 577 percent increase. In addition there were 131 Honours, 22 Masters and 10 doctoral students in that year.

The diploma course will be phased out in due course when the needs of the country for nurses at middle-management level have been met. In the meantime holders of the two year diploma are given credit for all the subjects towards the BA (Cur) which they can then complete in two years of part-time study.

THE PROBLEMS EXPERIENCED WITH DISTANCE TEACHING FOR POST-REGISTRATION NURSING DEGREES

When the diploma and degree courses were instituted at a distance education university, nurse educators lacked expertise in this method of teaching/learning nursing subjects. However, they were all experienced and well qualified nurse educators, with sound foundations in the subjects which they were required to teach and in contemporary nursing education theory and didactics, and the principles of peda- and androgogics. They made numerous errors, but with the support of other academic colleagues soon found their feet. The enthusiasm, indeed the gratitude of the students, for the privilege of studying in

this way, encouraged lecturers and students to achieve high standards. From the beginning the department of nursing science involved external examiners from other universities to ensure acceptable standards for the qualifications in nursing science which Unisa offered.

Both lecturers and students had to accustom themselves to :

- the apparently impersonal approach and the lack of the nursing fact-to-face communication to which they had been accustomed in the teaching/learning situation;

- The absence of orthodox routes of teaching/learning;

- the loneliness of the isolated student who consequently lacked the stimulus of immediate discussion with the lecturer or other students;

- the difficult situation for lecturers of not really knowing how the student is getting on;

- the delay between the learning of the student and the preparation of his/her assignments and receiving the feedback from the lecturer. Both parties had to face the constant risk that the student might find it hard to **unlearn** something that was entrenched in a wrong manner, and that delays in feedback aggravate this. The slow postal service to many of the remote parts of South Africa magnify this problem;

- the fact that every effort had to be made by teachers and learners to avoid uncritical teaching or learning, and to avoid rote learning, both in the method of teaching and questioning by teachers, and the moral obligation to understand instilled in the learners;

- avoid the error that the teacher is the total source of authority and knowledge. Both parties have to learn to recognise that distance teaching is a cooperative effort even though teacher and learner are far apart and that both have to be accessible to each other in some way or other;

- the fact that discouragement on the part of the student would inevitably lead to a high drop-out rate. Preventive action is therefore essential right from the beginning of each student's course;

- the difficulties that the student would encounter in receiving library books on time, purchasing prescribed books and having access to journals;

- the difficulties that the working student, who is also a mother of a family would encounter in completing assignments on time, and in attending the practica sessions.

Nevertheless the nursing courses have many strengths that other courses offered through distance education frequently lack. This is probably the reason for the high success rate rate in the nursing courses.

In brief these are :

- registered nurses are mature students who have already achieved success in a difficult educational programme. They have already discovered their own potential and have learnt how to exercise self-discipline and to keep at it. They have considerable knowledge and experience of the subject which enables them to orientate themselves fairly quickly to the programme;

- they know how to participate in group work;

- they are exceptionally well motivated, for distance education has offered them a means of obtaining the higher qualifications they need for advancement. The fact that the Public Service Commission has certain educational barriers to advancement up the career ladder, and the policy statements of the S.A. Nursing Association that nurse educators and nurse administrators need at least a baccalaureus degree, act as a powerful incentive to acquire such qualifications.

In a situation where the whole country, and even countries beyond the national borders, constitute the teaching campus, lecturers have had to develop a wide range of teaching strategies to get optimal benefit out of the restricted face-to-face sessions they have with the students. They have become experts in handling fieldwork, group discussions, workshops, micro teaching sessions, small group seminars,

individualised student counselling, and project work. Good relations exist between them and health service authorities who provide facilities for practica at no cost to the university. Lecturers have also developed considerable skill in the production of teaching media.

THE BENEFITS THAT HAVE ACCRUED

The benefits that have accrued to the nursing profession and to the health services are beyond calculation. Advanced nursing education is a pre-requisite for the development of the nursing profession and of the health services. Distance education :

- through its flexibility can reach the nurse who needs education at degree level wherever she lives. She contributes to the national economy whilst she is studying, and provides much needed nursing service in a profession that is always short of personnel;

- is economical. There is no other project in nursing education that shows such outstanding savings compared with conventional education, yet it does not lack any of the essential support services that advanced nursing education programmes require;

- provides university education to large numbers of nurses who would otherwise be deprived of the opportunity for higher education and for career advancement;

- has greatly increased the number of university graduates in specific fields of nursing, has helped to develop a strong research base in nursing in South Africa; and has contributed a number of nursing authors to the growing number of South African nursing authors;

- has enabled a large number of nurses to obtain very high executive and academic posts;

- has contributed substantially to South African nursing involvement in international health matters;

- has provided a corps of well educated professional women who are in the vanguard of developing health services and in community development, for the road to community development and the road to improved health services is the same road. These women are mothers in Africa. Their influence goes far beyond the health and social development scene. Future generations of African citizens will owe much to the role played by these nurse-mothers who received their advanced professional education through distance education.

Table 1

REGISTERED NURSES, TUTORS, NURSE ADMINISTRATORS AND COMMUNITY HEALTH NURSES ON REGISTERS OF S.A. NURSING COUNCIL 31 DECEMBER 1974 AND 1986

Registered Category	Number on registers 1974	Number on registers 1986
Registered nurses	43 521	64 917
Tutors	831	2 068
Nurse Administrators	500	2 159
Community Health Nurses	1 865	5 328

1. S.A. Nursing Council Records. C2/M75(b)

2. S.A. Nursing Council Records. C2/M87(B)

Table 2

REGISTERED TUTORS, NURSE ADMINSTRATORS AND COMMUNITY HEALTH NURSES PRODUCED BY UNIVERSITIES AND OTHER ACCREDITED EDUCATIONAL INSTITUTIONS IN THE YEARS 1976 AND 1986

Registered Category	Year	Number produced by other universities	Number of other participating universities	Number produced by UNISA
	1976			
Tutors		71	10	-
Nurse Administrators		43	8	-
Community Health Nurses		37	6	-
	1986			
Tutors		123 (53%)	13	109 (47%)
Nurse Administrators		155 (49.4%)	11	159 (50.6%)
Community Health Nurses		123 (37%)	13	209 (63%)

S.A.N.C. Records 1976. C2/M77 (for 1986)

S.A.N.C. Records 1986. C2/M87 (I and J for 1986).

Table 2 reflects the number of registered nurse tutors, nurse administrators and community nurses produced by universities in South Africa in the years 1976 and 1986.

Table 3

NUMBER OF REGISTERED TUTORS, NURSE ADMINISTRATORS AND COMMUNITY HEALTH NURSES ON THE REGISTERS OF THE S.A. NURSING COUNCIL AS AT 31 DECEMBER 1986 AND NUMBER OF PERSONS IN THESE CATEGORIES WHO QUALIFIED AT UNISA

	Total number of persons on the register in these categories Period 1945-1981 (41 years)	Total number of persons in these categories who hold UNISA qualifications. Period 1979-1986 (7 years)
Tutor	2 086	615
Nurse Administrator	2 159	988
Community Nurse	5 328	1 367
Grand total	9 573	2 970

(1) Records of the University of South Africa.

(2) Records of S.A. Nursing Council. C/2M87 I. for 1986.

NB The additional registrations have been registered since 1945 i.e. for a period of 41 years. Unisa's contribution to this total extends from 1979 to 1986 - a period of 7 years.

SUCCESS IN MEETING THE NEEDS OF THE HEALTH SERVICES FOR CERTAIN CATEGORIES OF PERSONNEL WITH ADVANCED QUALIFICATIONS

Table 4

NUMBER OF PERSONS WHO OBTAINED ADVANCED NURSING DIPLOMAS AND DEGREES FROM UNISA IN THE PERIOD 1976 - 1986

(First registrations 1979 i.e. a total period of 7 years)

Diploma in Advanced Nursing Science	307
B.A. (Cur)	1 357
Hons. B.A. (Cur)	132
M.A. (Cur)	25
D. Litt et Phil	12
	1 833

(1) UNISA Records 1979 - January 1987.

Table 1 reflects the number of persons who obtained advanced nursing diplomas and degrees from UNISA in the period 1976 - 1986.

CONCLUSION

The above tables demonstrate the size of the contribution made by distance nursing education to the production of nursing manpower in South Africa and to the preparation of other nurse leaders and hence to the development of the health services and the nursing profession in South Africa. If this system of nursing education is withdrawn, the nursing education, community health services and the nurse-management programmes will collapse, particularly when regard is had to the expanding health needs of the vast growing population for registered nurses holding baccalaureus and higher degrees in the nursing field. It has been possible to move basic nursing education into the main stream of post-secondary education in one move by affiliating all nursing colleges with universities as from 1 January 1985 and consequently being able to phase out all hospital nursing schools by not later than 1990.

Distance education in nursing education will grow from strength to strenth, for without it South Africa cannot meet its obligations for the production of nursing man-power. The nursing profession in South Africa owes a debt to the University of South Africa that it can never repay.

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